

COUNTY: HAMPSHIRE/DORSET/WILTSHIRE

SITE NAME: RIVER AVON
SYSTEM

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981, as amended.

Environment Agency Region: South Wessex

Water Company: Wessex Water PLC, Bournemouth and West Hampshire Water Company

Local Planning Authorities: Hampshire County Council, Dorset County Council, Wiltshire County Council, East Dorset District Council, New Forest District Council, Christchurch Borough Council, Salisbury District Council, Kennet District Council, West Wilts District Council

National Grid Reference: SZ 163923 (Christchurch Harbour) to: SU 073583 (Avon) ST 867413 (Wyllye) ST 963297 (Nadder), SU 170344 (Bourne) SZ 241147 (Dockens Water)

Extent of River SSSI: Approx 205.11 km, 507.79 (ha.)

Ordnance Survey Sheet: (1:50 000) 173 183 184 195

Date notified (under 1981 Act): 16 December 1996

Other Information:
A new river SSSI.

This site is listed as Grade 1* quality in 'A Nature Conservation Review' edited by D A Ratcliffe, C.U.P., 1977.

Parts of the site are separately notified as: Lower Woodford Water Meadows SSSI (1987); East Harnham Meadows (1995); Britford Water Meadows (1987); Avon Valley (Bickton-Christchurch) SSSI (1993).

The site is significant for the following habitat and species covered by Council Directive 92/43/EEC on The Conservation of Natural Habitats and of Wild Flora and Fauna:

Habitat

Floating vegetation of *Ranunculus* of plain and submountainous rivers

Species

Sea Lamprey <i>Petromyzon marinus</i>	Annex IIa
Brook lamprey <i>Lampetra planeri</i>	Annex IIa
Atlantic salmon <i>Salmo salar</i>	Annex IIa, Va
Bullhead <i>Cotto gobius</i>	Annex IIa
Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i>	Annex IIa

Parts of the site lie in the Avon Valley Environmentally Sensitive Area (ESA) and/or the West Wiltshire Downs and Cranborne Chase Area of Outstanding Natural Beauty (AONB). It also passes through the New Forest.

Description and Reasons for Notification:

Key Features

The River Avon and its tributaries are of national and international importance for their wildlife communities.

The Avon is richer and more varied than in most chalk streams with over 180 species of aquatic plant having been recorded, one of the most diverse fish faunas in Britain and a wide range of aquatic invertebrates. It rises in the Pewsey Vale as a network of clay streams fed by chalk springs. These converge to a chalk river running through Salisbury Plain. At Salisbury this is joined by the main Wiltshire tributaries and develops into a large calcareous river flowing over more acid sands and clay as it passes the New Forest and the Dorset Heaths. The site includes the Dockens Water, a largely unmodified acid stream draining New Forest heathlands.

The Wiltshire tributaries, of interest in their own right and with contrasting geologies, are included primarily on account of their importance, with the Avon itself, for internationally rare or threatened species (*Ranunculus* vegetation, sea lamprey, brook lamprey, bullhead, Atlantic salmon and Desmoulin's whorl snail). The Bourne section is a pure chalk stream, the Wylye rises in clay and develops into a chalk stream and the Nadder is influenced by greensand but again primarily calcareous in character.

In the upper reaches of the system the rivers support outstanding chalk stream fisheries. The surrounding land is mainly grazed or arable. From Salisbury to Ringwood the floodplain is much broader and the river becomes braided where old water meadow channels exist. The floodplain is largely given over to grazing.

The upper reaches of the rivers are largely fed from chalk springs and in the Avon itself flows are relatively constant. The water quality of the Avon and northern tributaries are affected by high levels of phosphates and nitrates. These appear to adversely affect the flora, especially downstream of sewage discharges.

Flora

The plant communities in the Avon and the three northern tributaries are characteristic of a calcareous river with a clay influence. The water crowfoot *Ranunculus penicillatus* var. *pseudofluitans* is dominant through most of the river. Other water crowfoot species are present, reflecting different conditions. In the upper reaches *R. peltatus* occurs, in the middle reaches *R. fluitans* and in the lower, more sluggish, river *R. circinatus*. The Dockens Water supports *R. flammula* and *R. omiophyllus* which are characteristic more of bogs than rivers.

Two other groups of aquatic plants are characteristic of the different geological influences. The starworts *Calitriche obtusangula* and *C. platycarpa* grow with water crowfoot in clumps on the river beds. *C. stagnalis* is more frequent in the chalk tributaries and *C. hamulata* in the Dockens Water. Pondweeds reflect the more enriched nature of the Avon itself with *Potamogeton pectinatus* and *P. perfoliatus* in the upper reaches, and *P. lucens*, *P. silicifolius* (a hybrid between the last two species) and *P. berchtoldii* in the lower section. In the more acid Dockens Water bog pondweed *P. polygonifolius* and broad-leaved pondweed *P. natans* are found. The influence of the more acid sands is also illustrated by the occurrence of common spike-rush *Eleocharis palustris* and hemlock water-dropwort *Oenanthe crocata*.

Other species of the channel flora in the Avon include spiked water-milfoil *Myriophyllum spicatum*, arrowhead *Sagittaria sagittifolius*, lesser water-parsnip *Berula erecta* and fool's watercress *Apium nodiflorum*. Flowering rush *Butomus umbellatus* occurs in both its submergent and emergent forms, perhaps its fullest expression in a British river. The nationally scarce river water dropwort *Oenanthe fluviatilis* is found in the Avon and the Wylye, and the locally important hemlock water dropwort *Oenanthe crocata* also occurs in the system, although more characteristically at the river edge.

Adjacent and associated habitats comprise swamp, wet woodland and flood pasture habitats that are now rare both locally and nationally, although they would once have dominated the floodplains of the upper Avon. The swamp communities are dominated by sweet grass

Glyceria maxima, common reed *Phragmites australis* or lesser pond sedge *Carex acutiformis*. These are especially important habitats for invertebrates and birds.

The wet woodlands are dominated by alder *Alnus glutinosa*. Their ground flora is governed by the water levels, with nettles *Urtica dioica* on dryer ground and greater tussock sedge *Carex paniculata* in wetter areas. There are small stands of mixed alder-ash *Fraxinus excelsior* woodland, whose ground flora is characterised by creeping jenny *Lysimachia nemorum*.

The site includes small fragments of agriculturally unimproved flood pasture. These are dominated by three rare grassland types: meadow foxtail-great burnet *Alopecurus pratensis-Sanguisorba officinalis*, crested dog's tail-black knapweed *Cynosurus cristatus-Centaurea nigra* and crested dog's tail-marsh marigold *C. cristatus-Caltha palustris*.

These flower rich grasslands are relics of traditional grazing systems once common throughout Wiltshire's river valleys. Their swards are more productive without fertilisers than many other grassland types, however they are inferior by modern agricultural standards and most have been lost to drainage and fertilisation.

Invertebrates

The invertebrate fauna of the Avon is extremely rich and contains most of the species associated with a large river running through calcareous areas. In the upper stretches, over clay, there is a reasonable range of mayfly species and a variety of gastropods. The middle reaches have the most diverse fauna, again especially mayflies and mollusca, including the very localised *Baetis atrebatinus*. Tall fen habitats are notable for the presence of the internationally important Desmoulin's Whorl Snail. From the lower river two species of aquatic mollusc have been recorded: *Valvata macrostoma* (vulnerable status) and the pea mussel *Pisidium tenuilineatum* (rare status), both inhabitants of slow flowing waters

Birds

The river system and its adjacent vegetation provide a variety of habitats for breeding, wintering and migrating birds. The lower Avon supports a good breeding populations of kingfisher *Alcedo atthis*, reed warbler *Acrocephalus scirpaceus* and sedge warbler *Acrocephalus schoenobaenus*. It is also important as a feeding site for passage birds, in particular common sandpiper *Tringa hypoleucos*, green sandpiper *Tringa ochropus* and garganey *Anas querquedula*. Several pairs of the rare Cettis warbler *Cettia cetti* are associated with the riverine habitats.

Around Salisbury and in the upper reaches of the system birds breeding on the river include little grebe *Tachybaptus ruficollis*, kingfisher and mute swan. Fringing vegetation is used by reed bunting *Emberiza schoeniclus*, yellow wagtail *Motacilla flava*, sedge and reed warblers.

Fish

The system has an extremely diverse fish fauna with more species recorded in the Avon than in any other British river. The renowned salmonid fisheries, with wild populations of migratory sea trout *Salmo trutta*, brown trout and Atlantic salmon *Salmo salar*. A wide range of coarse fish are present, including bullhead *Cottus gobio*, minnow *Phoxinus phoxinus*, 3-spined stickleback *Gasterosteus aculeatus*, dace *Leuciscus leuciscus*, stone loach *Noemacheilus barbatulus*, pike *Esox lucius*, grayling *Thymallus thymallus*, eel *Anguilla anguilla*, perch *Perca fluviatilis*, roach *Rutilus rutilus*, gudgeon *Gobio gobio*, bleak *Alburnus alburnus*. The system is notable for sea *Petromyzon marinus* and brook lamprey *Lampetra fluviatilis*, the latter having particularly important spawning areas in the upper reaches.

Mammals

The system as a whole is well used by water voles *Arvicola terrestris* and water shrews *Neomys fodiens*, with occasional recent evidence of otter *Lutra lutra*.