



## DEPARTMENT OF THE ENVIRONMENT

### **DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT OWENKILLEW RIVER, COUNTY TYRONE. ARTICLE 24 OF THE NATURE CONSERVATION AND AMENITY LANDS (NORTHERN IRELAND) ORDER 1985.**

The Department of the Environment (the Department), having consulted the Council for Nature Conservation and the Countryside and being satisfied that the area described and delineated on the attached map (the area) is of special scientific interest by reason of the flora, fauna and physiographical features and accordingly needs to be specially protected, hereby declares the area to be an area of special scientific interest to be known as the 'Owenkillew River Area of Special Scientific Interest'.

The area is of special scientific interest because of the physical features of the river and its associated riverine flora and fauna, with adjacent woodlands providing additional interest. In comparison to other rivers of its type, the Owenkillew River is notable for the physical diversity and naturalness of the bank and channel, and the richness and naturalness of its plant and animal communities. It is a very important river for rare species and includes the largest known population of the Freshwater Pearl Mussel *Margaritifera margaritifera* in Northern Ireland.

The Owenkillew River is a typical fast-flowing spate river, which gradually changes in character from ultra-oligotrophic (waters that are very low in plant nutrients) to mesotrophic (moderately low in nutrients) as it flows from its source to its confluence with the Strule.

The river rises in Davagh Forest, initially as the Davagh Water and then the Broughderg River. In this upstream reach, it flows through coniferous plantation and moorland. The deep channel has been resectioned and the flow regime is dominated by sequences of run and glide. Tufted Hair-grass *Deschampsia cespitosa* is frequent along the banks and bryophytes such as *Rhynchostegium riparioides*, *Fontinalis squamosa* and *Hygrohypnum luridum* are dominant in the channel.

In the lower section of the Broughderg, the channel becomes wider and the river meanders through a mosaic of moorland and rough pasture. The dominant flow regime is deep glide. Common channel features include gravel and sand point and side bars. The channel substrate is composed of gravel and pebble with occasional boulders. Stream Water-crowfoot *Ranunculus penicillatus* ssp. *penicillatus*, Unbranched Bur-reed *Sparganium emersum*, Broad-leaved Pondweed *Potamogeton natans*, Yellow Water-lily *Nuphar lutea* and Intermediate Water-starwort *Callitriche hamulata* are common in the channel, while the wet margins are dominated by Creeping Bent *Agrostis stolonifera* and Floating Sweet-grass *Glyceria fluitans*.

As the Broughderg gives way to the Owenkillev River, the channel becomes more natural in character. Boulders are more frequent in the channel and the flow regime is more dynamic, with extensive areas of cascade, riffle, run and glide with some deep pools. Additional species in the channel include Shining Pondweed *Potamogeton lucens*, with bryophyte species such as *Hygrohypnum luridum* and *Racomitrium aciculare* on the exposed boulder-tops. Reed Canary-grass *Phalaris arundinacea*, Tufted Hair-grass *Deschampsia cespitosa* and Creeping Bent *Agrostis stolonifera* dominate the banks and wet margins. Further downstream, both banks become increasingly tree-lined. The river remains fast-flowing and dynamic, with sequences of riffle, rapid and run. The channel substrate is composed of large cobbles with gravel/pebble and coarse sand, while cobble side and point bars are common features.

In the mid-reaches of the Owenkillev, the channel widens but remains highly natural with a similar dynamic flow regime. Agricultural management of adjoining land is more intensive, and although the river banks have been modified in the past, they have now recovered to a large extent. *Hygrohypnum luridum* and *Racomitrium aciculare* are again the dominant bryophyte species along the wet margins and rock-tops, while the channel macrophyte cover is reduced with *Fontinalis antipyretica* and Stream Water-crowfoot *Ranunculus penicillatus* ssp. *penicillatus* the dominant species.

Below Gortin, the flow regime remains dynamic, with sequences of rapid and chute. The steep-sided bedrock banks have a blanket covering of the thallose liverwort *Conocephalum conicum*. The channel is also composed of bedrock and is densely shaded with extensive broad-leaved woodland adjoining. Bryophyte and liverwort species such as *Thamnobryum alopecurum*, *Scapania undulata* and *Fontinalis antipyretica* dominate the channel and wet margins.

In the lower reaches, before the Owenkillev joins the Strule near Newtownstewart, the river flow slows down and is characterised by long stretches of riffle and some deeper areas of glide. Long cobble side bars are common and aquatic macrophyte cover is again dominated by Stream Water-crowfoot *Ranunculus penicillatus* ssp. *penicillatus* and *Fontinalis antipyretica*.

Remnants of more extensive woodland that once covered the valley occur as small stands along the middle reaches of the river. These woodlands add to the diversity of the area, as well as enhancing the river by providing food and shelter for riverine animals and by improving bank stability. The woods are characteristically acidic in type, with variations in composition influenced mainly by soil moisture conditions. On the drier slopes, the mature canopy is composed of Sessile Oak *Quercus petraea*, Downy Birch *Betula pubescens*, Ash *Fraxinus excelsior* and Goat Willow *Salix caprea*, with a shrub layer of Hazel *Corylus avellana*, Hawthorn *Crataegus monogyna*, Holly *Ilex aquifolium* and Rowan *Sorbus aucuparia*. Ferns and Bramble *Rubus fruticosus* agg. are common over a ground cover of Greater Wood-rush *Luzula sylvatica*, Bluebell *Hyacinthoides non-scripta* and Wood-sorrel *Oxalis acetosella*. On wetter slopes and waterlogged soils, Alder *Alnus glutinosa* and Grey Willow *Salix cinerea* are the characteristic trees and shrubs, occasionally accompanied by the rare Bird Cherry *Prunus padus*. The woodland floor is covered by plants such as Opposite-leaved Golden-saxifrage *Chrysosplenium oppositifolium*, Marsh-marigold *Caltha palustris*, Wood Anemone *Anemone nemorosa* and in very acidic conditions, Marsh Violet *Viola palustris*.

In a few locations, primarily in the upper reaches, the adjacent river terraces still retain wet depressions that support rich fen and swamp communities. These wetland communities are often dominated by stands of sedges such as Bottle Sedge *Carex rostrata*, Bladder-sedge *C. vesicaria* and Water Sedge *C. aquatilis* and grasses such as Reed Canary-grass *Phalaris arundinacea*, along with a rich assortment of herbs including Bogbean *Menyanthes trifoliata*, Marsh Cinquefoil *Potentilla palustris* and Marsh-marigold *Caltha palustris*.

The Owenkillew River is of particular importance for its associated fauna. It is one of the few rivers in Northern Ireland that still retains a significant and viable population of the Freshwater Pearl Mussel *Margaritifera margaritifera*. This species was once very common, covering large areas of riverbed in many of the river systems in Northern Ireland. In recent decades, it has undergone a dramatic decline and has totally disappeared from all but a small number of rivers. Only a very few of these populations are large enough to be viable. The decline has been largely brought about by pearl fishing, river engineering works and poor water quality. Other animals present include Otter *Lutra lutra*, evidence of which is found along the whole length of the river. Birds such as Dipper *Cinclus cinclus*, Kingfisher *Alcedo atthis*, Grey Heron *Ardea cinerea* and Grey Wagtail *Motacilla cinerea* feed along the river. Although the fish community has not been intensively surveyed, both Salmon *Salmo salar* and Brown Trout *S. trutta* are known to be present in the river, in addition to species such as Brook Lamprey *Lampetra planeri*, Minnow *Phoxinus phoxinus*, Eel *Anguilla anguilla*, Stone Loach *Noemacheilus barbatulus* and Three-spined Stickleback *Gasterosteus aculeatus*.

## SCHEDULE

**The following operations and activities appear to the Department to be likely to damage the flora, fauna and physiographical features of the area:**

1. Any activity or operation which involves the damage or disturbance by any means of the surface and subsurface of the land and the river bed, including ploughing, rotovating, harrowing, reclamation and extraction of minerals, including sand, shingle, shell, gravel and peat.
2. Operations or activities which would affect wetlands (including marsh, fen, rivers, streams and open water), e.g.
  - (i) change in the methods or frequency of routine drainage maintenance;
  - (ii) modification of the structure of any watercourse (rivers, streams, springs, ditches, dykes and drains) including their banks and beds, by means such as re-alignment, infilling, damming, regrading, revetment, sheet piling and narrowing;
  - (iii) alterations to the water-table and water-level, permanently or temporarily;
  - (iv) change in the management of bank-side vegetation.
3. Construction, removal or disturbance of any permanent or temporary structure including building, engineering or other operations.
4. Alteration of natural or man-made features, the clearance of boulders or large stones and grading of rock faces.
5. The application of herbicides, fungicides or other chemicals, whether terrestrial or aquatic, deployed to kill any form of wild plant or animal, except for plants listed as being noxious in the Noxious Weeds (Northern Ireland) Order 1977.
6. The disturbance, killing or taking of any wild animal including Freshwater Pearl Mussel *Margaritifera margaritifera*, except where such killing or taking is treated as an exception in Articles 5, 6, 11, 17, 20, 21 and 22 of the Wildlife (Northern Ireland) Order 1985.

7. The destruction, displacement, removal or cutting of any plant, seed or plant remains, other than for:
  - (i) plants listed as noxious in the Noxious Weeds (Northern Ireland) Order 1977;
  - (ii) normal cutting or mowing regimes for which a consent is not required under (11).
8. The release into the area of any plant or animal (other than in connection with normal grazing practice), except for the established release of Brown Trout *Salmo trutta* and Salmon *Salmo salar* that are native to the area. 'Plant' includes seed, fruit or spore. 'Animal' includes birds, mammals, fish, reptiles, amphibians and invertebrates.
9. Changes in game, waterfowl or other hunting practices, changes in fishing practices or changes in fisheries management.
10. Any change in the present annual pattern and intensity of grazing, including any change in the type of livestock used or in supplementary feeding practice.
11. Any change in the established method or frequency of rolling, mowing or cutting.
12. Any change in the annual pattern of application of manure, slurry, lime or artificial fertiliser.
13. The storage or dumping, spreading or discharge of any material not specified under paragraphs (5) or (12), including the disposal of sheep-dip solution.
14. Burning.
15. Changes in tree or woodland management, including afforestation, planting, clearing, selective felling and coppicing.
16. The following activities undertaken in a manner likely to damage or disturb the wildlife of the area:
  - (i) Educational activities;
  - (ii) Research activities;
  - (iii) Recreational activities, including water sports;
  - (iv) Exercising of animals.
17. Use of vehicles or craft likely to damage or disturb the wildlife of the area.

Sealed with the Official Seal of the  
Department of the Environment on 2 FEBRUARY 2001



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**DR J S FAULKNER**  
Senior Officer of the Department  
of the Environment

#### FOOTNOTES

- (a) Please note that consent by the Department to any of the operations or activities listed in the Schedule does not constitute planning permission. Where required, planning permission must be applied for in the usual manner to the Department under Part IV of the Planning (Northern Ireland) Order 1991. Operations or activities covered by planning permission are not normally covered in the list of Notifiable Operations.
- (b) Also note that many of the operations and activities listed in the Schedule are capable of being carried out either on a large scale or in a very small way. While it is impossible to define exactly what is "large" and what is "small", the Department would intend to approach each case in a common sense and practical way. It is very unlikely that small scale operations would give rise for concern and if this was the case the Department would give consent, particularly if there is a long history of the operation being undertaken in that precise location.

# OWENKILLEW RIVER

## Views About Management The Environment (Northern Ireland) Order 2002 Article 28(2)

### A statement of Environment and Heritage Service's views about the management of the Owenkillew River Area of Special Scientific Interest ("the ASSI")

This statement represents the views of Environment and Heritage Service about the management of the ASSI for nature conservation. This statement sets out, in principle, our views on how the area's special conservation interest can be conserved and enhanced. Environment and Heritage Service has a duty to notify the owners and occupiers of the ASSI of its views about the management of the land.

Not all of the management principles will be equally appropriate to all parts of the ASSI and there may be other management activities, additional to our current views, which can be beneficial to the conservation and enhancement of the features of interest. It is also very important to recognise that management may need to change with time.

The management views set out below do not constitute consent for any operation or activity. The written consent of Environment and Heritage Service is still required before carrying out any operation or activity likely to damage the features of special interest (see the schedule on pages 4 and 5 of the attached Document B for a list of these operations and activities). Environment and Heritage Service welcomes consultation with owners, occupiers and users of the ASSI to ensure that the management of this area maintains and enhances the features of interest, and to ensure that all necessary prior consents are obtained.

## MANAGEMENT PRINCIPLES

### 1. The river

Environment and Heritage Service would encourage the maintenance of varying flow rates and natural erosion and sedimentation processes by the appropriate management of channels and banks. Such management should include avoiding excavation of gravel shoals and bars, minimising in-river and bankside defence works, limiting abstraction during low flow years and avoiding dredging in the channel.

### 2. Pollution

Environment and Heritage Service would encourage a continuing reduction of pollution from industrial or agricultural sources such as mineral workings and run-off of silt and nutrients from agricultural land.



### **3. Bankside Habitats**

The ASSI supports rich and varied river and bankside wildlife habitats. Environment and Heritage Service would encourage the conservation and enhancement of the variety of vegetation present by careful bank use and maintenance. Marginal woodland is particularly important because it helps to stabilise the river bank and regulate the local climate, while submerged roots create a refuge for fish. Many of the insects and other invertebrates associated with the woodland provide food for fish.

### **4. Animals**

The ASSI provides a habitat for a wide variety of mammal, bird, fish and invertebrate species. Environment and Heritage Service would encourage the maintenance and enhancement of these species and their habitats.

In particular, Otters, Freshwater Pearl Mussels and spawning Atlantic Salmon should suffer as little disturbance as possible, either through direct physical disturbance or through poor water quality. The movement and migration of Otters and Atlantic Salmon will be maintained by avoiding construction of temporary or permanent structures which could impede their passage through the river system.

### **5. Fishing**

Environment and Heritage Service recognises the important economic and social roles of fishing and welcomes sustainable fishery management that is sensitive to the special interests of the ASSI.

### **6. Grazing**

Low intensity grazing on riverside grasslands and stock feeding away from the banks has contributed to the conservation and enhancement of this feature of interest. Environment and Heritage Service would encourage the extension of this practice.

## **Oakwood**

Oakwood is an important habitat for wildlife. It provides food and shelter for a wide variety of mammals, birds and invertebrates.

Environment and Heritage Service would encourage the maintenance and enhancement of the woodland through the development of its structure and the conservation of its associated native plants and animals.

Specific objectives include:

Encourage the woodland to become more “mature” by avoiding disturbance to the trees. The structure of the wood will gradually become more diverse, with well-developed canopy, shrub and ground layers, and



an abundance of species like Ivy, mosses, liverworts and lichens that live on the trees themselves.

Encourage the retention of dead wood, both on the woodland floor and still standing in the canopy. Dead wood is a very important habitat for some of the less conspicuous woodland species such as fungi and invertebrates.

Encourage regeneration of woodland through the control of grazing. In general, natural regeneration is preferable to planting.

#### Management principles applicable to all habitats throughout the site

Ensure that disturbance to the site and its wildlife is minimised.

Discourage non-native species, especially those that tend to spread at the expense of native wildlife.

Maintain the diversity and quality of habitats associated with the main habitats, such as grassland, heath, bog and scrub woodland through sensitive management. These adjoining habitats can often be very important for wildlife.



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**E Diane Stevenson**  
Authorised Officer

Dated the *1<sup>st</sup>* of *FEBRUARY* 2008



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**Environment**  
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# OWENKILLEW RIVER - A SPECIAL PLACE



The Owenkillew River in its mid reaches



Dipper

Rivers change as they flow downstream from the mountains to the sea. The channel gets wider, the speed of the water varies and the river bed and bank change in shape. All these features affect the environmental conditions for plants and animals and each part of the river has its own distinctive wildlife community. The river channel is home to aquatic flowering plants, mosses, liverworts and lichens, adapted to survive in waters, frequently very turbulent, that vary in depth and flow. Invertebrates, particularly freshwater shellfish and crayfish, as well as insects, are important indicators of water quality.



The Davagh Water in its upper reaches

banks may be the only areas of natural habitat in an intensively farmed landscape. The best rivers are now being declared as Areas of Special Scientific Interest (ASSIs). In doing so, we aim to guarantee the survival of Northern Ireland's wildlife and protect the range of river communities for the enjoyment of future generations.



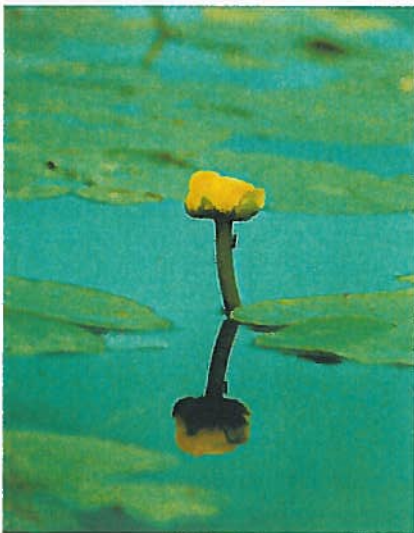
Riverine mosses - more typical of the upper reaches

Rivers host a range of fish species, which generally need a natural bed and clean water to spawn and maintain healthy populations and where fish populations are sufficiently large, rivers support Otters. River banks are also important for a wide variety of habitats, from fringing wetland vegetation to mature woodland. Associated with the woodland are flowering plants, ferns, mosses, birds, mammals and invertebrates. River



Otters

The Owenkillew River is special for its rich communities of plants and animals. This variety of species is a consequence of the naturalness of the river bank and channel and the physical diversity displayed along its length. The river is a typical fast-flowing spate river which gradually changes as it flows downstream from its source in Davagh Forest. In these upper-reaches, initially the Davagh Water and then the Broughderg River, the waters are nutrient-poor, flowing swiftly in deep channels through coniferous forests and moorland. Moving downstream, the lower section of the Broughderg channel becomes wider and more diverse, whilst maintaining its nutrient-poor nature. In these mid-reaches, the river runs swiftly over gravel and pebbles. As the Broughderg gives way to the Owenkillew River, it becomes even more diverse. Here, fast flowing waters over rocks and boulders alternate with areas of slower flow where the river bed consists of a mixture of sand and gravel with some deep pools.



Yellow Water-lily

The plant communities reflect the changing character of the river. In the upper-reaches, mosses and liverworts dominate the vegetation within the river channel. In the mid-reaches, the river channel is frequently lined by trees. Where remnant woodland occurs in small pockets, it provides food, shelter and shading for both aquatic and terrestrial animals, as well as stabilising the river bank. Here, where the channel substrate is composed of gravel and pebbles, beds of Stream Water-crowfoot and Yellow Water-lily brighten the river surface, while the wet margins are dominated by Creeping Bent and Floating Sweet-grass. In other stretches, where the water channel is completely shaded by



Stream Water-crowfoot

the bordering trees, the river plants are reduced once more to mosses and liverworts.

The Owenkillew is one of the few rivers in Northern Ireland which still supports a significant population of the rare Freshwater Pearl Mussel. This species has suffered a dramatic decline in recent decades, but still persists in high densities on the Owenkillew where coarse sand and gravel are present in the undisturbed river bed. Signs of Otter are found along the river banks, indicating the health of fish stocks and the unspoilt nature of the river. Both Salmon and Brown Trout have been recorded, in addition to species such as Brook Lamprey and Stone Loach. Birds such as Dipper, Kingfisher, Grey Wagtail and Grey Heron feed along the length of the river, a further indication of the health of invertebrate and small fish populations.

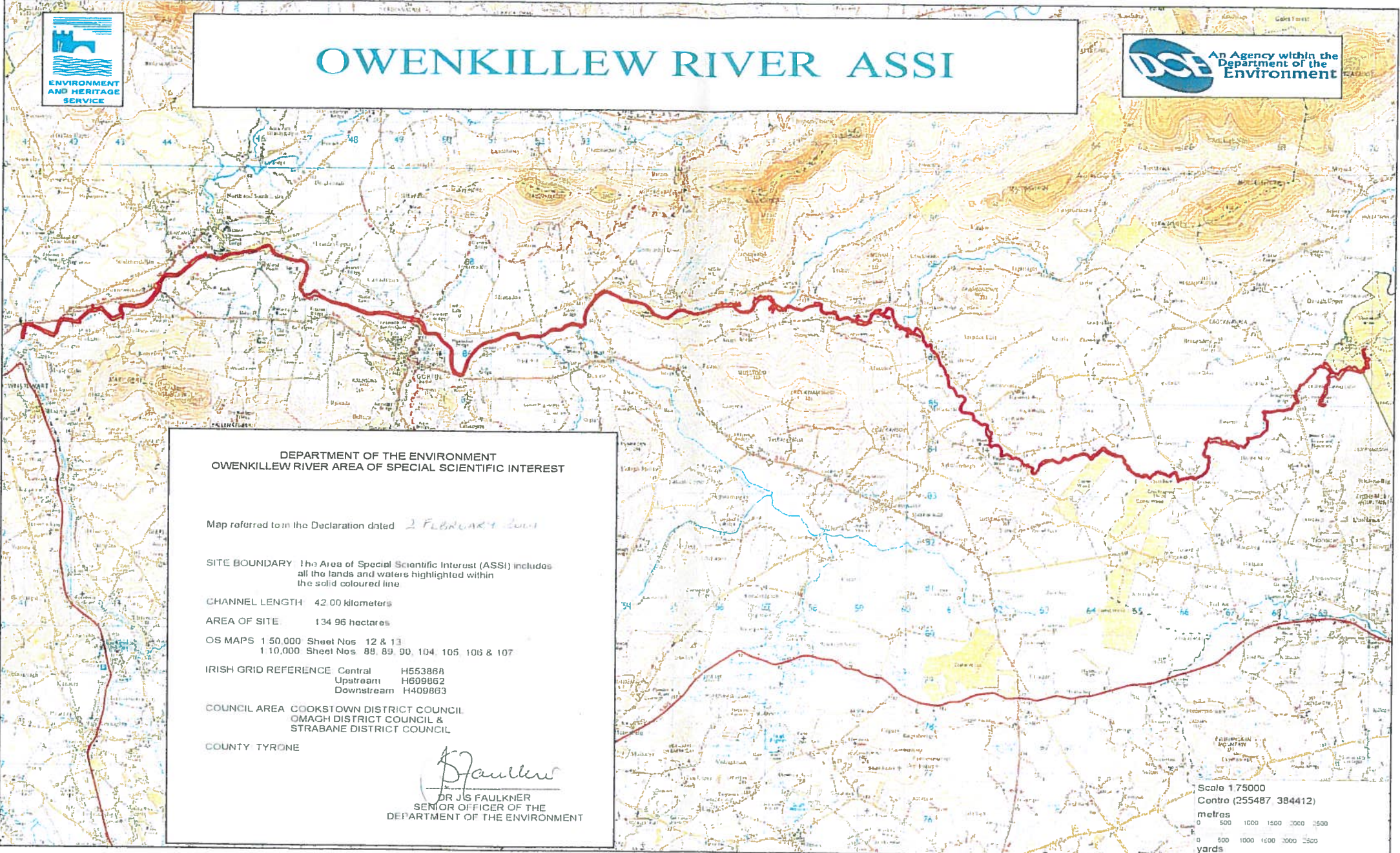


Freshwater Pearl Mussel

Rivers and the wildlife that depends on them take a considerable time to evolve, but are very easily damaged by human activity. Drainage works alter the channel and the bed, resulting in a hostile environment for many inhabitants of the river and its bank. Pollution can cause obvious fish kills, but may also have long term effects on invertebrates and plants. It is therefore vitally important to maintain our rivers in as natural a state as possible, in order to safeguard the wealth of wildlife that depends on them. Similarly, bankside vegetation takes a long time to develop because of its complexity and because many plants are slow to grow and spread. Environment and Heritage Service aims to work with landowners to ensure that special rivers like the Owenkillew are protected for the future.



# OWENKILLEW RIVER ASSI



## DEPARTMENT OF THE ENVIRONMENT OWENKILLEW RIVER AREA OF SPECIAL SCIENTIFIC INTEREST

Map referred to in the Declaration dated *2 FEBRUARY 2001*

**SITE BOUNDARY** The Area of Special Scientific Interest (ASSI) includes all the lands and waters highlighted within the solid coloured line

**CHANNEL LENGTH** 42.00 kilometers

**AREA OF SITE** 134.96 hectares

**OS MAPS** 1:50,000 Sheet Nos 12 & 13  
1:10,000 Sheet Nos 88, 89, 90, 104, 105, 106 & 107

**IRISH GRID REFERENCE** Central H55386A  
Upstream H609862  
Downstream H409863

**COUNCIL AREA** COOKSTOWN DISTRICT COUNCIL  
OMAGH DISTRICT COUNCIL &  
STRABANE DISTRICT COUNCIL

**COUNTY TYRONE**

*J. Faulkner*  
DR J.S. FAULKNER  
SENIOR OFFICER OF THE  
DEPARTMENT OF THE ENVIRONMENT

Scale 1:75000  
Centre (255487 384412)  
metres  
0 500 1000 1500 2000 2500  
yards  
0 500 1000 1500 2000 2500