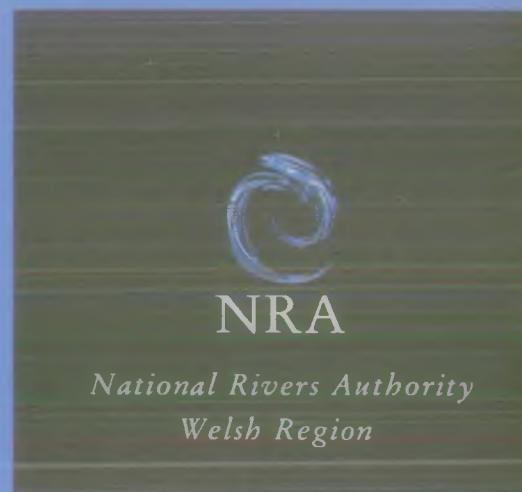


THE RIVER OGMORE
ACTION PLAN SUPPORT DOCUMENT
1996

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NRA Wales 48

OGMORE CATCHMENT MANAGEMENT PLAN

ACTION PLAN

SUPPORT DOCUMENT

JANUARY 1996

**National Rivers Authority
Welsh Region**

ENVIRONMENT AGENCY
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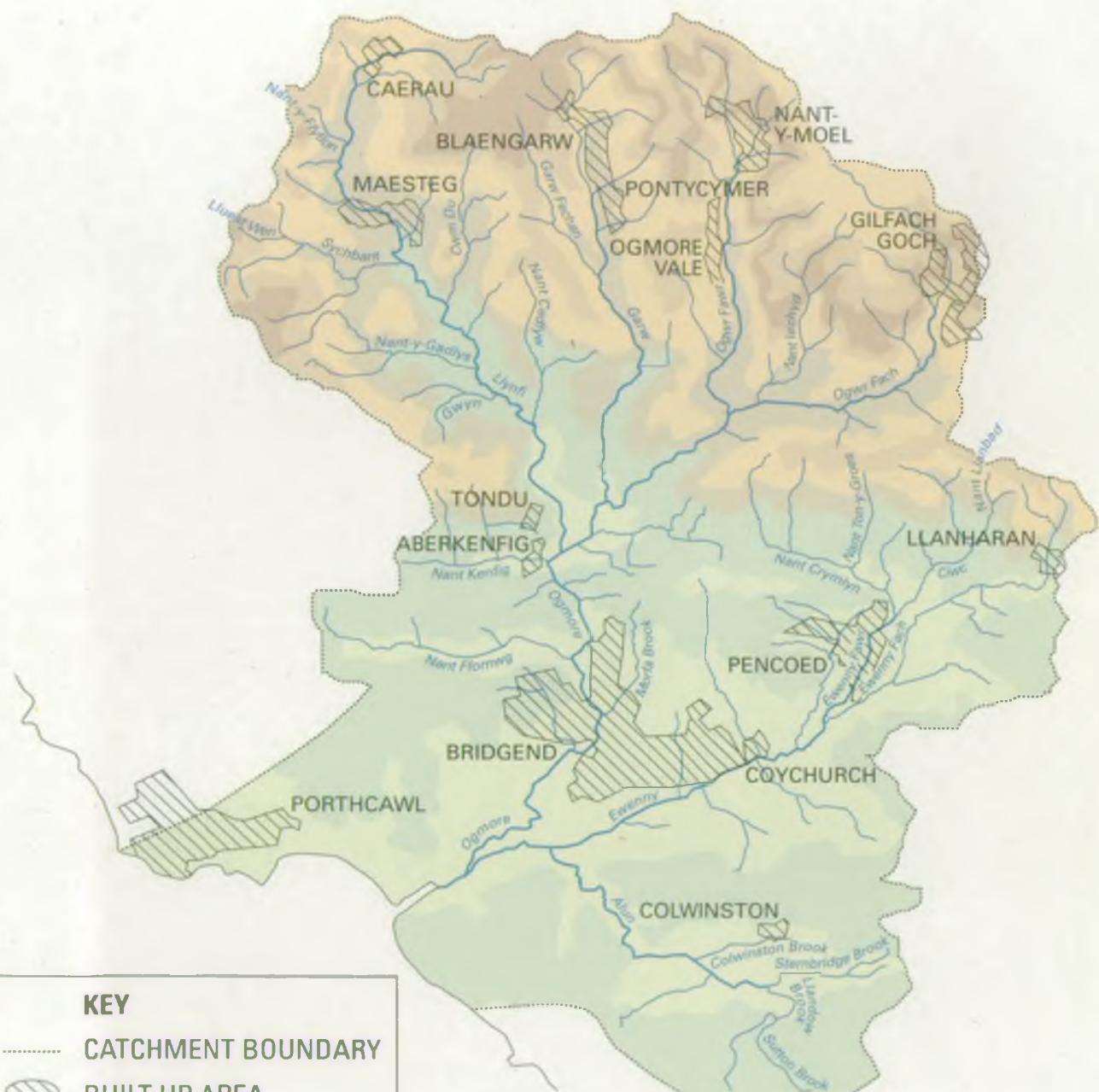
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MAIN TOWNS AND RIVERS

MAP 1.



KEY

- CATCHMENT BOUNDARY
- BUILT UP AREA
- MAIN RIVER
- MINOR RIVER
- COASTLINE
- LAND 0 - 100 m
- LAND ABOVE 100 m
- LAND ABOVE 200 m
- LAND ABOVE 300 m
- LAND ABOVE 400 m
- LAND ABOVE 500 m

N

0

5 km

1.0 THE PURPOSE OF CATCHMENT MANAGEMENT PLANS (CMPS)

1.1 THE ROLE OF THE NRA

The rivers, lakes, estuaries and coastal waters of Wales are subject to large and rapidly increasing demands from the users of water. Many different uses interact, or compete for water or water space, and may come into conflict with one another. The National Rivers Authority (NRA) aims to protect and improve the water environment in England and Wales and to harmonise conflicts between competing water users. Our general duties include:-

- Maintenance and improvement of water quality by control of pollution in surface and groundwater.
- Flood defence for people and property.
- Flood warning.
- The management of water resources to achieve the right balance between the needs of the environment and those of abstractors.
- Maintenance and improvement of fisheries.
- Conservation of the natural water environment.
- Promotion of water based recreation.
- Navigation (in some rivers).

We also play a key role in the strategic management of the interaction between users of the water and land environments.

We believe that it is important that the interests of all water users are considered in the development and protection of the water environment. Consequently, we have chosen to promote our vision and management proposals via published Catchment Management Plans (CMPS).

1.2 THE SCOPE OF THE SUPPORT DOCUMENT

This document presents the range of uses identified in the Ogmore catchment, the targets required to protect them in terms of water quality, water quantity and physical features, and the areas which fail to live up to these targets. The assessment is based on a detailed study carried out by the NRA during 1991, with a further review in 1994/95, following the launch of the original Draft Ogmore CMP in 1992.

The information provided in this document supports the Ogmore Action Plan, published in January 1996. The Action Plan will steer us in developing our own management programme for the catchment and guiding us in the way we respond to any development proposals, as we go forward into the Environment Agency in April 1996.

This support document is divided into 3 sections:

- Uses** presents the identified Uses to which the Ogmore water environment is put (including those to be incorporated in the new Statutory Water Quality Objective (SWQO) scheme);
- Targets** identifies the statutory and informal targets required to support the identified Uses. The targets are expressed in terms of water quality, water quantity and physical features;
- State of the Catchment** identifies those areas/locations which fail to meet the targets set to protect them, thus identifying issues requiring resolution. Areas of conflict between legitimate Uses are also identified and raised as issues.

The plan of action to resolve the issues identified can be found in the Ogmore Action Plan, January 1996.

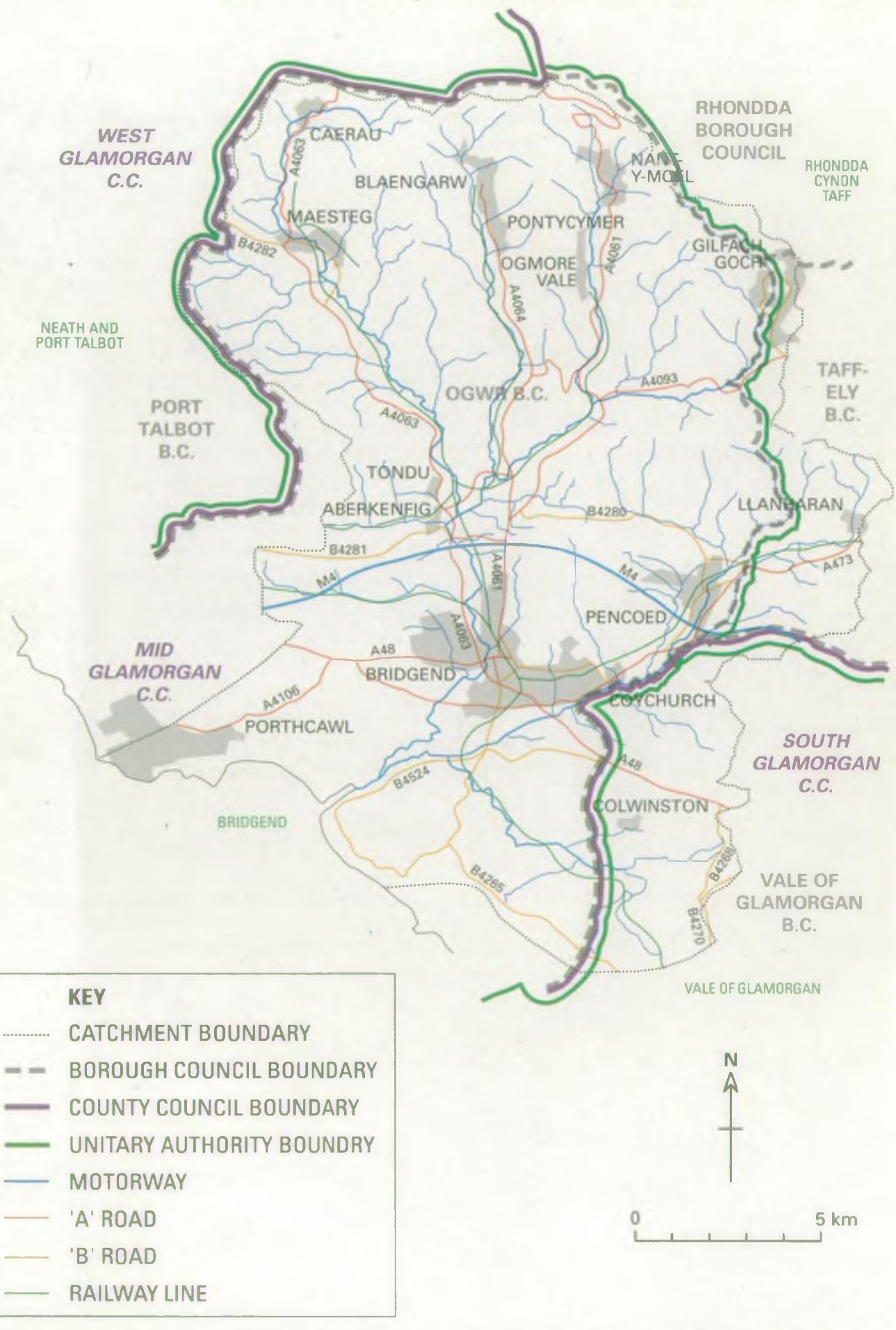
2.0 THE USES OF THE OGMORE CATCHMENT

The following sections catalogue the legitimate Uses of the Ogmore catchment which fall under our control or affect us in one way or another.

- **The General Information** gives an outline of the nature of our responsibility towards each Use.
 - **The Local Perspective** gives more detailed information about the Uses, within this catchment.
 - **We have set management Aims and Environmental Requirements** for each Use. These are designed to protect both the environment and the needs of other Uses.
 - In **Section 3** these specific targets are used to help us set overall **Targets**, for the whole catchment, for water quality, water quantity and physical features, that reflect our view of the balance of interests between the different users of water.
-

INFRASTRUCTURE AND POPULATION

MAP 2.



2.1 URBAN DEVELOPMENT (including road and rail)

General Information

The development of the urban or "built" environment is a land use which can affect the water environment and its uses. Such development is generally controlled via the local authority planning process involving the production of development plans and the approval of specific development proposals. The move to plan led development has further increased the importance of development plans.

We attach great importance to the effective influence of the planning process through all its stages. Detailed comments are provided on all development plans and development proposals received by the NRA as a statutory planning consultee. The Authority has produced the document "Guidance Notes for Local Planning Authorities on the methods of protecting the water environment through development plans". Responses to planning consultations often include proposed "planning conditions" which the planning authority may include within planning approval.

Certain types of development are promoted for approval by other statutory procedures. These include major developments such as roads, railways, airports and barrages. These also are influenced and controlled by early consultation.

A key purpose of this plan is to provide planning authorities and prospective developers with information about the management and use of the water environment in this catchment, our policies and potential environmental constraints including flood risk. This should also facilitate the identification of appropriate development opportunities.

The final decision on development plan policies and development proposals are taken by planning authorities, planning inspectors or the relevant Secretary of State. However government guidance includes reference to the need to fully consider our comments when determining development plans or proposals.

When the Authority objects formally to a development proposal then supporting evidence will be provided at any subsequent Planning Appeal or Public Inquiry.

DEVELOPMENT

The NRA's policies for the management of the water environment are based on the sustainability principle. It is hoped that this plan can effectively link with other plans for the built environment so as to provide mutual support for development which is environmentally and economically sustainable.

Local Perspective

The catchment is situated mainly within the county of Mid Glamorgan with the south-eastern corner impinging into South Glamorgan. The catchment covers the major part of Ogwr BC, and minor areas of Taff Ely BC, Rhondda DC and Vale of Glamorgan BC.

Section 5 (Housing) of the Draft Replacement Mid Glamorgan County Structure Plan recognises a need for growth. The population could increase by approximately 16% in the catchment within the plan period up to the year 2001, if there is a continuation of the current trend in migration. Much of this growth is likely to be accommodated in the existing towns and main villages with limited infilling in existing rural villages.

We have prepared statements for inclusion within County Structure Plans which refer to aims and policies in respect of development. These statements should allow developers to take the policies into account in the preparation of their proposals.

Aims

To ensure that development or construction activity does not damage the water environment or detract from its use.

To ensure that development does not affect the water environment so as to threaten life or property.

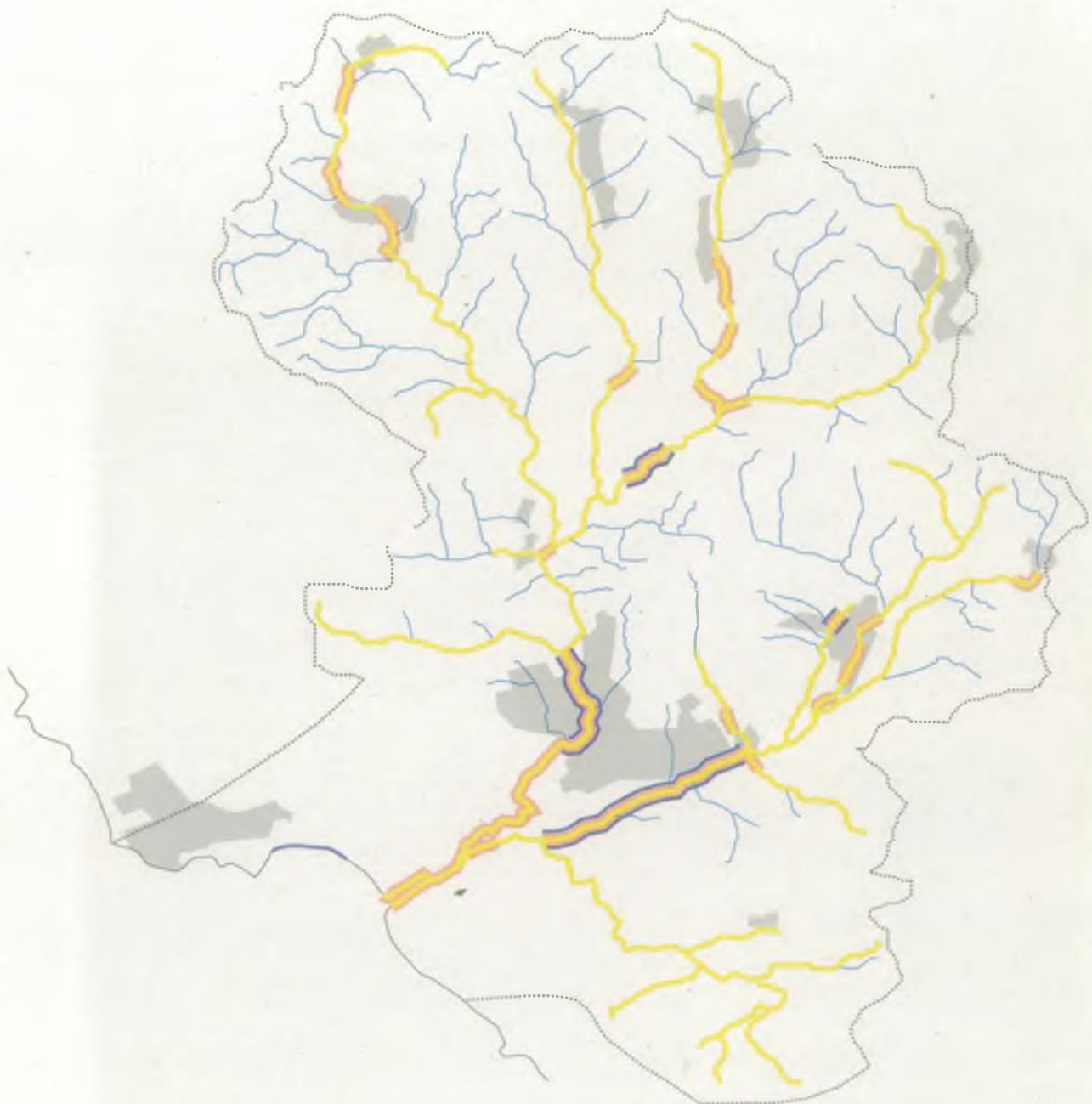
To promote opportunities within developments that will enhance the water environment and its use.

Environmental Requirements:

Water Quality	<p>Development should not adversely affect the water quality requirements of other uses in the catchment.</p> <p>Development must not cause the failure of any Statutory Water Quality Objective within the catchment.</p> <p>Developments should be consistent with relevant NRA policies. These include the "Policy and Practice for the Protection of Groundwater", and policy on "Development in Sewered Areas".</p>
Water Quantity	<p>To protect inland waters, and groundwater which is a locally important source of water supply, from the detrimental effects of development, including afforestation and other changes in land use.</p>
Physical Features	<p>Development should not have an unacceptable flood risk.</p> <p>Development should not create an unacceptable flood risk in other areas.</p> <p>Developers must pay for work needed to assess and reduce flood risk.</p> <p>Development should be consistent with NRA policies, including the Flood Plain Policy (in production), and Policy and Practice for the Protection of Groundwater.</p> <p>Development should not adversely affect the requirements of other uses in the catchment, including those associated with the conservation of the natural water environment.</p>

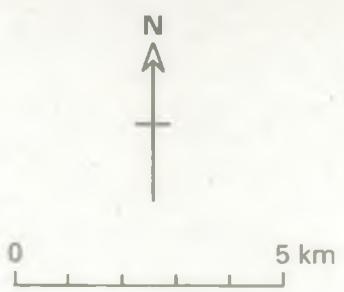
FLOOD DEFENCE

MAP 3.



KEY

- CATCHMENT BOUNDARY
- AREAS AT RISK FROM FLOODING FROM MAIN RIVER
- NRA FLOOD ALLEVIATION SCHEMES
- STATUTORY MAIN RIVER



2.2 FLOOD DEFENCE

General Information

This Use relates to the protection of people and property against flooding from rivers and the sea and primary role of the river as a drainage system for surface water.

Flooding normally follows from extreme climate conditions such as very heavy rainfall causing high river flows and, in coastal areas, surge and storm generated waves combining with high tides. The severity of an individual flood event is generally described in terms of its frequency of occurrence. This is often expressed as a return period in years, for example, 1 in 50 years (i.e. a flood of this severity would, on average, be expected to occur once in a 50 year period).

Areas of land next to rivers known as flood plains or washlands take the additional flow or naturally store water when the channel capacity is exceeded. If significant areas of flood plain are embanked, tipped or built upon the lost storage volume leads to higher river levels elsewhere.

The coastline of Wales has been divided into a series of Coastal Cells. The boundaries of each cell have been set to reflect the boundaries of the natural physical processes acting on that section of coast. Coastal Groups have been formed containing representatives of each Maritime District Council, the NRA and other bodies with an interest in the management of the Coastline.

Recent Government publications such as the PPG on Coastal Planning and Circular 68/92 Development in Flood Risk Areas, place a requirement on local planning authorities to take account of coastal processes and flood risk in their determinations. The sources of information to assist these decisions will be the S.105 Survey presently under preparation by the NRA and the Shoreline Management Plan as agreed with the Coastal Group formulated from study work undertaken on the physical influences affecting the coastline.

Recent guidance has now been issued by Central Government on the preparation of Shoreline Management Plans to ensure a consistent approach between Coastal Groups.

Flood alleviation schemes are constructed where necessary and cost effective. The standard of protection to be provided is determined by an analysis of the options for the most economically and technically advantageous solution. For a scheme to proceed the benefits, in financial terms, must outweigh the costs.

The Water Resources Act 1991 requires the NRA to exercise general supervision over all matters relating to flood defence. Powers are also provided for the issue of consents for works on rivers and watercourses designated as Main River and for ensuring the maintenance of flow in river channels and the removal of obstructions.

The Land Drainage Act 1991 provides the Local Authority, and where appropriate Internal Drainage Boards, with powers to carry out flood defence works to ensure the proper flow of water. The Act also provides the NRA with additional consenting powers on ordinary watercourses.

The provision of flood defences including the maintenance of channel capacity, needs to be executed with care if other Uses - notably fisheries and conservation - are not to be affected unduly. Consultations are carried out within and outside the NRA during the formulation and undertaking of schemes. In this way, wherever feasible, and consistent with the original purpose, habitat enhancements and the needs of landscape and heritage will form part of the scheme.

Water Level Management Plans will be drawn-up for sites agreed with the Countryside Council For Wales in accordance with the guidance issued by MAFF/Welsh Office.

The NRA provides and operates a flood warning system on designated main rivers and coastal areas at risk from flooding by the sea. The system provides warnings to the police who pass the warnings to the general public.

Local Perspective

The catchment suffered extensive flooding in 1960 when large numbers of properties were affected, particularly in the Bridgend area. Following that flood event a major flood defence scheme was promoted and construction was completed during the 1980s. This scheme consisted of flood defences being constructed from Wildmill to Newbridge Fields. A second scheme was promoted for the Ewenny, a large tributary of the Ogmore, which provided protection to the Ford Motor Company and the Waterton Industrial Estate.

Flood alleviation schemes have been constructed at various other sites in the catchment, notably at Aberkenfig, Treoes, Coychurch, Pencoed and Ewenny Village. Flood events during the last few years have raised

DEVELOPMENT

concern about the current level of protection provided by the Ewenny scheme and a study into its performance has been completed. This has confirmed that flood defence standards in this sub-catchment are below the indicative standard and a further study has been initiated to determine whether it is feasible to achieve improvements. The results of the study are expected in 1996.

Regular maintenance works are undertaken at those sites where formal flood defences are in place and at other sites where flood defence standards are dependent upon existing channel capacity. These works involve removing shoals, dredging the river channel and controlling bankside vegetation in order to maintain the flow carrying capacity of the existing channel. They also include clearing tidal outfalls, desilting drainage channels in order to provide effective outfalls to adjoining drainage systems, and inspecting and operating flood defences during flood conditions. In addition, a general tree management programme is undertaken in order to minimise the risk of blockage on those catchments prone to such problems. Despite these initiatives, problem areas still remain, in particular at Pencoed, upstream of which are sited extensive opencast operations and the Rockwool complex, and at Blackmill on the confluence of the Ogwr Fawr and Ogwr Fach.

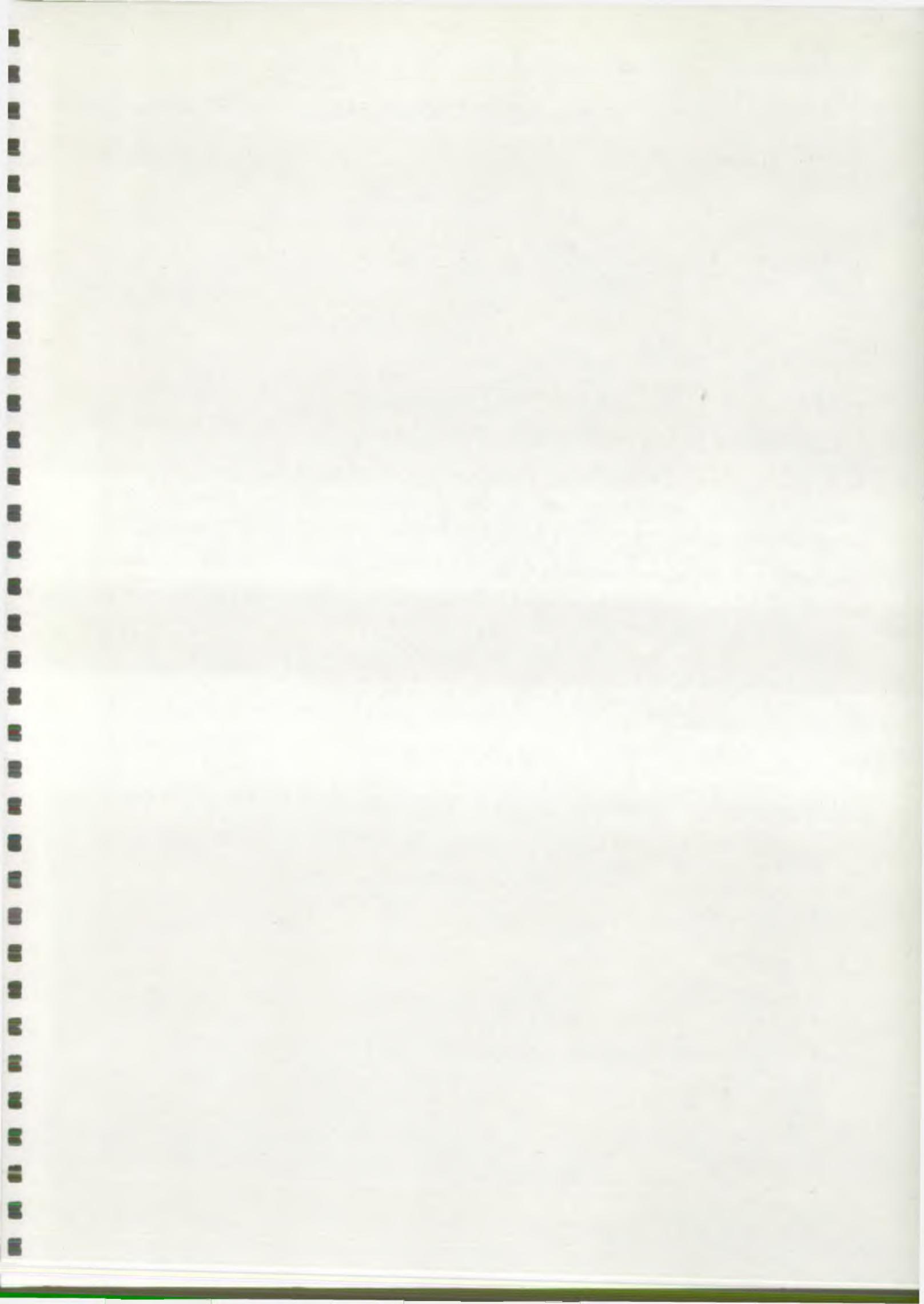
Areas at risk from tidal inundation include the towns of Newton and Porthcawl. Land adjacent to the lower reaches of the Ogmore (downstream of Merthyr Mawr) and the Ewenny (downstream of its confluence with the Alun) are also at risk.

Aims

- To maintain existing flood defences for people and property against flooding from rivers and the sea, taking account of environmental requirements.
- To improve the standard of flood defences where appropriate by promoting and constructing new flood defences.
- To maintain effective drainage, taking account of environmental requirements.
- To provide warnings of imminent flooding to the public (via the police) where appropriate.

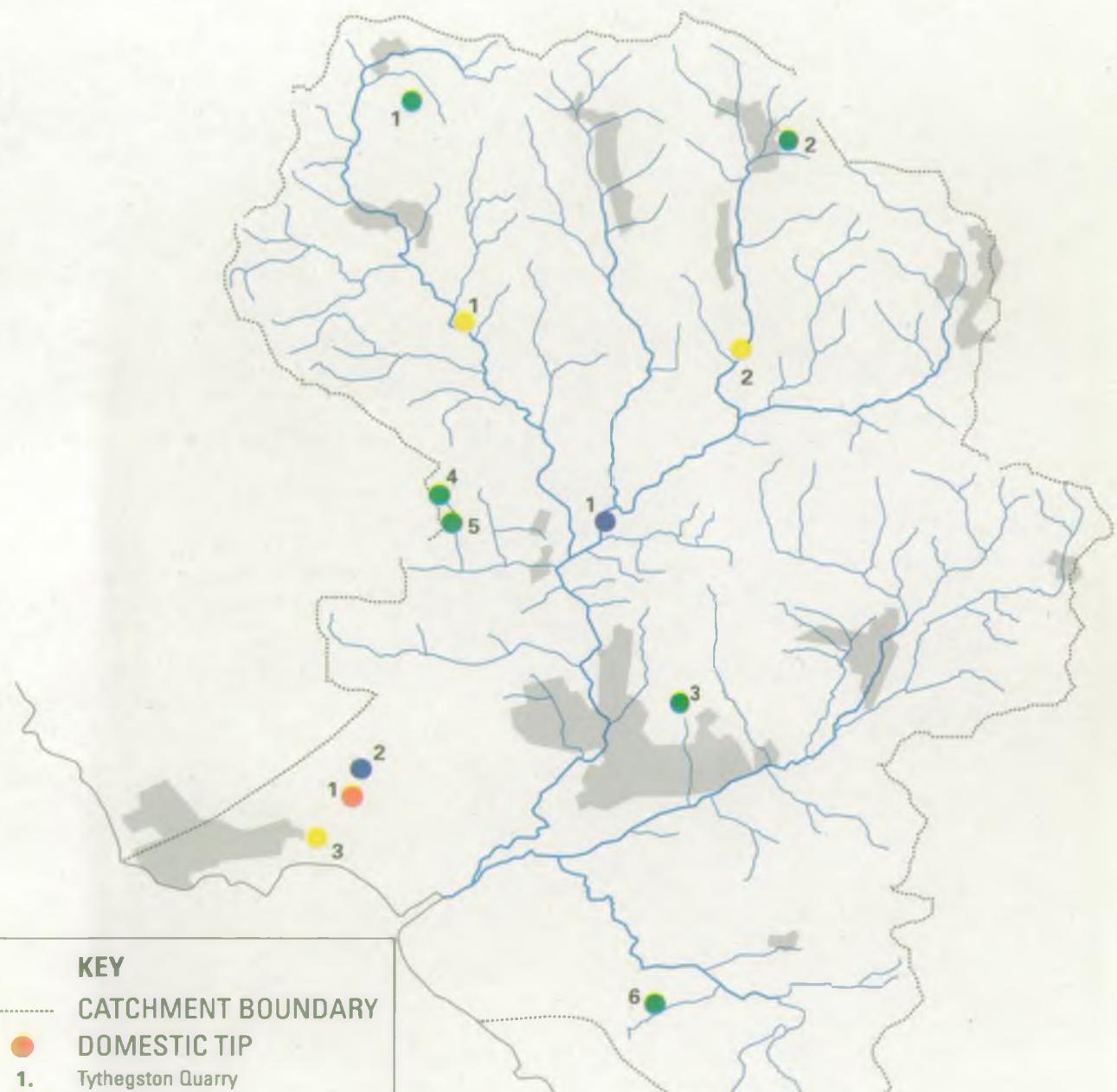
Environmental Requirements:

- Physical Features**
- In protected areas, the flood defences/river bank should not be overtopped by a flood flow within a specified return period.
 - In areas where land use is primarily agricultural, the watercourse should provide effective drainage, taking account of environmental requirements.
 - No development should be permitted which would impair the effectiveness of any flood defence scheme or prevent access for maintenance of flood defences.
 - To ensure where possible that the effectiveness of the flood plain to store and convey flood waters is not impaired.
 - Adequate arrangements should be provided for flood warning.
 - Environmental requirements will be taken into account when designing and undertaking flood defence works.
 - The operating practices agreed in Water Level Management Plans will be followed.



SOLID WASTE DISPOSAL

MAP 4.



KEY

CATCHMENT BOUNDARY	
●	DOMESTIC TIP
1.	Tythegston Quarry
●	INERT TIPS
1.	Cwm Ffos
2.	Blaenogwr
3.	Coity
4.	Baiden Farm
5.	Ffordd y Gyfraith
6.	Croes Cwtta
●	TRANSFER STATIONS
1.	ACO Skips
2.	Tythegston
3.	Llandow Civic Amenity
●	HISTORIC TIP SITES
1.	Lletty Brongu
2.	Pantyrawel
3.	Newton Burrows

0 5 km

N

2.3 SOLID WASTE DISPOSAL (LANDFILL)

General Information

The disposal of domestic, commercial and industrial waste into landfill sites is a common form of waste disposal in England and Wales. Sites receiving material that is not inert have the potential to produce a toxic liquid effluent (leachate) which can pollute surface and groundwater. Consequently our policy is for all new sites to be designed and operated in a way that contains any liquid effluents. This is monitored by the NRA. Older sites may cause pollution long after tipping has ceased and in these cases, the owner or operator may be required to undertake remedial works.

Waste Regulation Authorities (WRAs) presently issue Waste Management Licences to handle waste or operate a waste disposal site under the Environmental Protection Act 1990. The NRA is a statutory consultee on applications for all landfill waste management licences.

Local Perspective

There is one domestic waste disposal site within the catchment located at Tythegston Quarry. This site is situated within a former limestone quarry to the north-east of Porthcawl. Although there is no direct discharge to surface water, monitoring has revealed some leachate contamination of groundwater in the area. We are currently discussing methods of improving the groundwater monitoring around the site, and controlling the generation of leachate, with the Waste Regulation Authority.

There are several small landfill sites receiving inert waste, and a number of sites with waste management licences, including transfer stations and scrap merchants. In general these do not pose a significant risk of pollution.

Sludge disposal to agricultural land in the Vale of Glamorgan occurs on a large scale, providing a means of solid waste disposal. The main sources of this sludge are Dŵr Cymru Welsh Water sewage treatment works (STWs), particularly Penybont STW, and the Jamont Paper Mills at Llangynwyd in the Llynfi Valley. Discussions involving ourselves, ADAS, the SE Wales Waste Management group and Local Authorities are currently underway to improve the regulation of such operations.

Aims To ensure that waste disposal sites are designed and operated in a way that does not adversely affect other uses of surface water or groundwater.

To protect the quality of groundwaters by implementing the NRA's Groundwater Protection Policy.

Environmental Requirements:

Water Quality Waste disposal sites must be designed and managed to prevent liquid effluent from adversely affecting the quality of surface water and groundwaters.

All Waste Management sites must comply with the conditions included in the licence, enforced by the WRA.

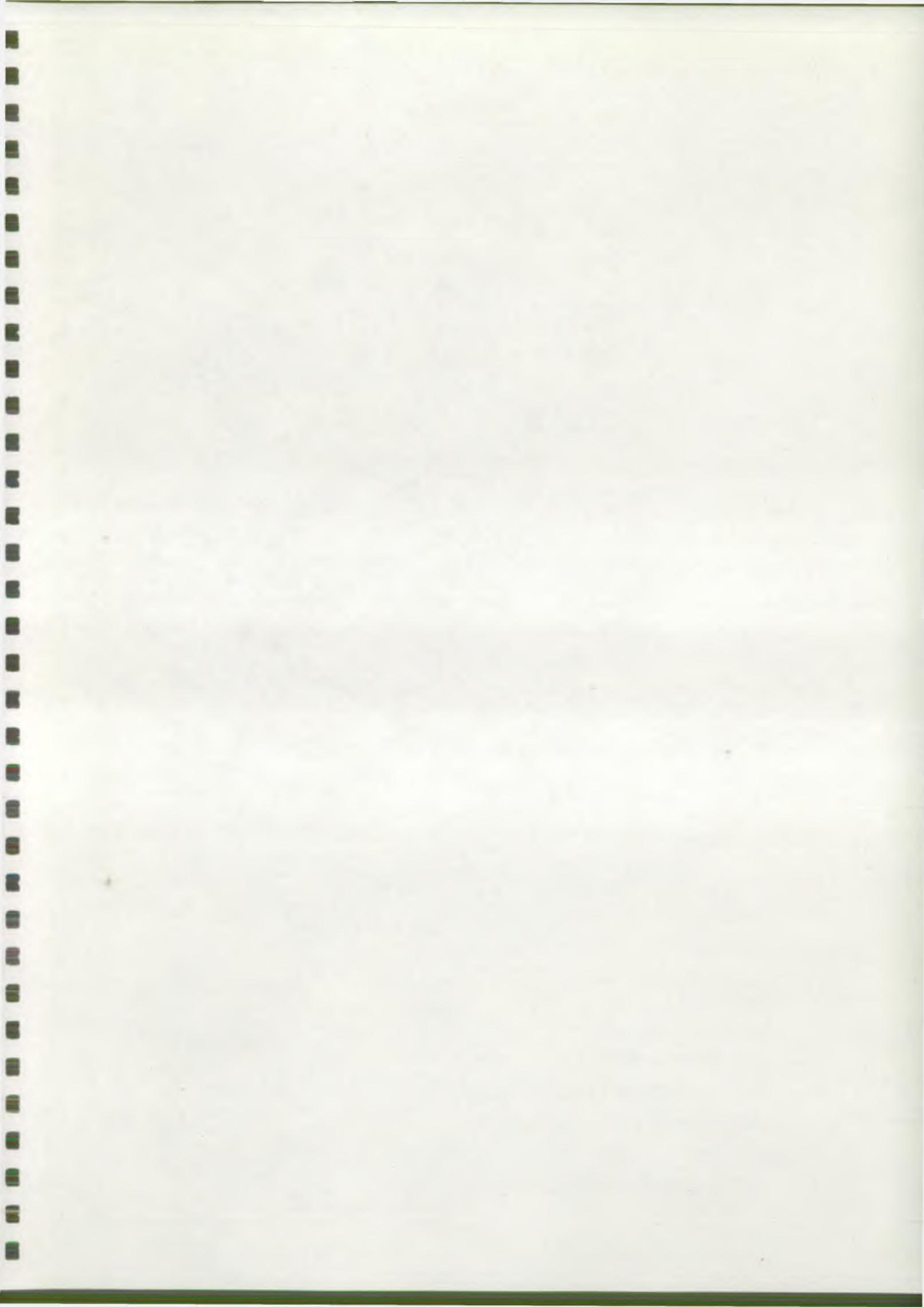
Sites must comply with the conditions included on any discharge consent or prohibition notice, issued and enforced by the NRA.

Water Quantity Waste disposal activities must not harm groundwater resources or adversely affect the rights of water abstractors.

The NRA's Position Statement regarding landfill and waste management can be found in the document "Landfill and the Water Environment".

Physical Features Windblown litter from waste disposal sites must not be permitted to create an aesthetic problem in adjacent rivers, estuaries or coastal waters.

Following the cessation of tipping, all aftercare provisions stated on the planning consent, or licence surrender conditions, must be carried out by those responsible.



FISHERIES

MAP 5.



KEY

- CATCHMENT BOUNDARY
- EC DESIGNATED FRESHWATER FISHERIES
- AREAS INACCESIBLE TO MIGRATORY SALMONIDS
- INHIBITED MIGRATION OF SALMONIDS
- FISH PASS
- MAN-MADE BARRIER TO MIGRATORY FISH

TROUT POPULATION	SALMON POPULATION
EXCELLENT	■
GOOD	■
MODERATE	■
POOR	■
ABSENT	■

SOURCE: 1992 RJSMP SURVEY

2.4 FISHERIES

General Information

The Fisheries Use addresses the protection, maintenance and improvement of fish stocks within the catchment: angling is covered in Section 4.13 as a recreational Use.

In order to protect different types of fishery the EC Freshwater Fish Directive (78/659/EEC) provides two levels of protection for water quality to support:-

- | | | |
|--------------------|---|--|
| Salmonid fisheries | - | e.g. salmon and trout. |
| Cyprinid fisheries | - | generally referred to as coarse fisheries. |

A third category:-

- | | | |
|------------------|---|---|
| Migratory waters | - | i.e. waters that are used for the passage of migrating fish such as salmon and sea trout. |
|------------------|---|---|

is largely protected by the provisions of the EC Dangerous Substances Directive which applies to all controlled waters. In addition, standards contained in our policy for the protection of estuarine water are applied to this use.

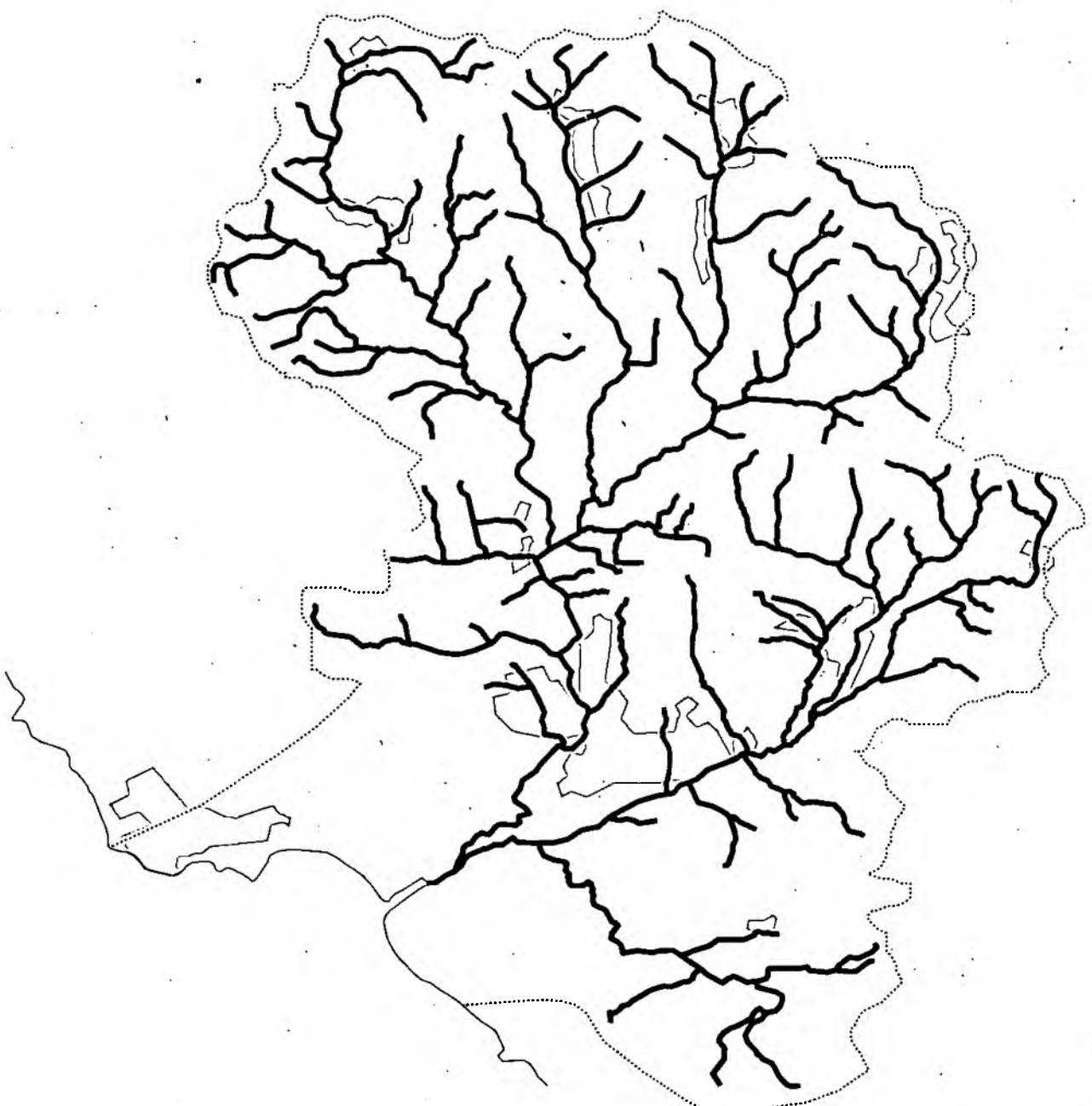
While the Freshwater Fish Directive can only be applied by statute to certain 'identified waters', the standards it contains will be used informally, for the purposes of CMPs, to assess the whole catchment for this Use.

Water quantity and the physical habitat are also very important factors in the conservation of fish stocks. While these factors do not receive the protection from formal targets, as applied to water quality, the CMP process will help to identify the requirements for their protection in the clearest manner possible.

The control of 'poaching' is a vital aspect in the conservation of fish stocks and we employ a sizeable Bailiff force to enforce the legal protection offered to fish stocks by both the Salmon and Freshwater Fisheries Act (1975) and the Salmon Act (1986).

BROWN TROUT PROTECTION AREAS

MAP 6.



KEY

- CATCHMENT BOUNDARY
- RELICT TROUT
- WILD TROUT FISHERY
- MIXED TROUT



0

5 km

Local Perspective

Salmonid Fishery

The salmonid fishery has been undergoing improvements in parallel with the improved water quality during the last 15 years. However, a major pollution incident in December 1987 caused a massive fish mortality over 14km of river from the mid reaches of the Llynfi to the Ogmore Estuary. As a consequence, the Llynfi/Ogmore Restoration Group was established to implement the restoration of the salmon and sea trout fishery and obtain best value for money from the compensation received from the polluter.

Survey work undertaken in 1992 indicated that juvenile salmon were present at 33% of the survey sites where they were previously unrecorded. Good to excellent juvenile trout populations were recorded in the Nant Iechyd and Garw Fechan, upper Ewenny and Llynfi. Only one site, on an inaccessible upper Llynfi tributary, was found to be devoid of salmon or trout. Populations of trout were found to be low in the Llynfi and lower Garw, both of which have been affected by land reclamation works. Since the completion of these works juvenile densities have increased significantly (1993 survey). Generally, there appears to have been a marked improvement in juvenile populations throughout the catchment.

Few relict trout stocks exist within the catchment as a consequence of a long history of mitigation stockings and restockings by angling clubs. Those that do exist are situated in the headwaters of tributaries and unlikely to be put at risk by stocking practices.

As part of the restoration work, over 215,000 microtagged salmon and sea trout smolts and parr have been released into the catchment. The number of tagged salmon recorded by anglers shows a significant increase on previously declared catches although the numbers of tagged adult sea trout reported remains low.

The continued improvement in the fishery should be assisted by the alleviation of two major obstructions to migrating fish in the Nant Sychbant and the Garw Fechan. The only remaining obstructions are long culverts at the head of the catchments of major tributaries including the Garw, Ogwr Fach and the Llynfi. It is likely that the culverts on the Llynfi and the Garw will soon be by-passed by new open stream channels.

The Ewenny was restocked in 1994 with grayling, a species which became locally extinct in the 1960s. Whilst this species is not a salmonid, it is usually grouped with these game fish.

ENVIRONMENT AND WATER QUALITY

Cyprinid Fishery	The natural characteristics of a spate river are not usually suited to coarse fish species and, as a result, no such fishery exists in the Ogmore.
	There are a few stillwaters in the catchment that are inhabited by cyprinids. These include the highly productive Pwll-y-waun and Wilderness lakes in Porthcawl and the newly created Treoes Lake, 2 miles to the east of Bridgend.
Marine Fishery	The Ogmore estuary and adjacent coastal waters support a variety of marine and brackish water species (for example mullet and flounder), many of which migrate into the area seasonally.
Aim	To sustain, or assist the recovery of, the populations of wild fish species at the levels appropriate to a catchment of this type and to protect the passage of migrating fish into and from freshwater.

Environmental Requirements:

Water Quality

Rivers	Waters should comply with the appropriate standards under the EC Freshwater Fish Directive (78/659/EEC).
Stillwaters	These waters should comply with the same standards as set for rivers.
Estuaries	These waters should comply with the appropriate standards of the EC Dangerous substances Directive and the appropriate standards in the NRA policy for the protection of estuarine water quality.
Water Quantity	The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Physical Features

An appropriate diversity of natural instream and bankside habitats should be maintained to support the fish typical of the river type.

Appropriate levels of riparian and instream vegetation should be maintained to provide adequate cover for fish.

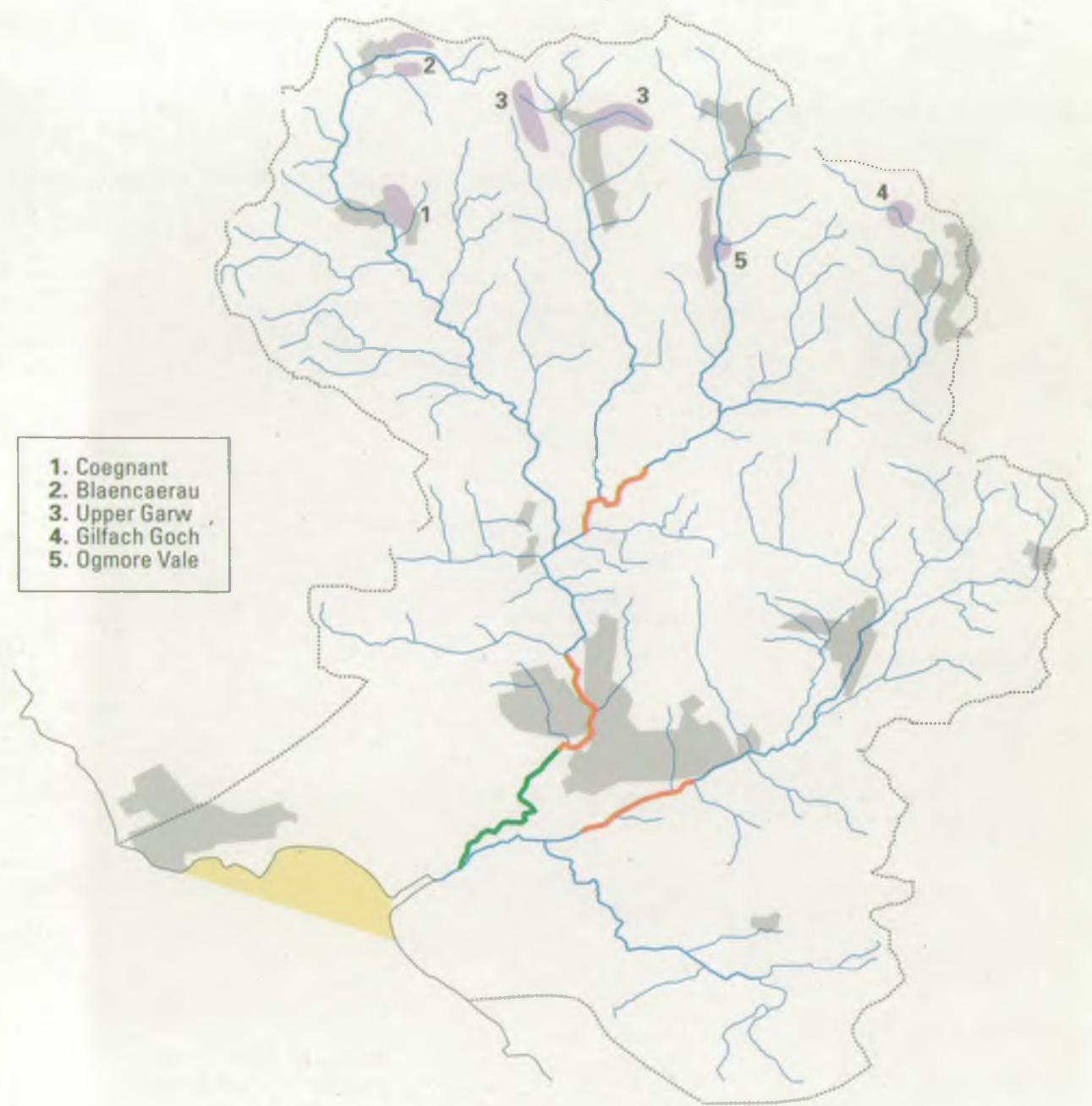
Artificial barriers should not obstruct passage of migratory fish.

Natural or artificial barriers should not lead to excessive exploitation of fish.

River maintenance and other works should be carried out in a way that causes the least detrimental impact on the fishery.

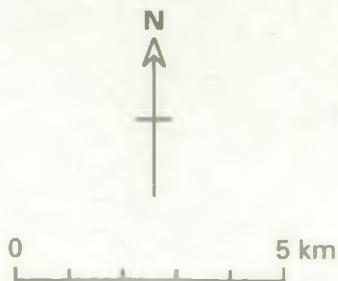
CONFLICTS BETWEEN USERS

MAP 7.



KEY

- CATCHMENT BOUNDARY
- FLOOD DEFENCE AND FISHERIES
- CANOEING AND ANGLING
- LAND RECLAMATION SITES AND ANGLERS
- WATERSKIIERS AND SURFERS / WINDSURFERS AND SWIMMERS



2.5 RIVER ECOSYSTEM

General Information

The River Ecosystem (RE) Use addresses the protection, maintenance and improvement of the basic water quality required to support different types of river ecosystem (including fisheries). The Use is based on the River Ecosystem Classification Scheme which comprises five classes of water quality of which RE Class 1 has the highest quality.

RE Class 1: Water of very good quality (suitable for all fish species)

RE Class 2: Water of good quality (suitable for all fish species)

RE Class 3: Water of fair quality (suitable for high class coarse fish populations)

RE Class 4: Water of fair quality (suitable for coarse fish populations)

RE Class 5: Water of poor quality (which is likely to limit coarse fish populations)

Further details of the scheme may be found in Surface Waters (River Ecosystem) (Classification) Regulations 1994.

This scheme is especially useful for setting objectives which we use as planning targets to manage catchment water quality (see Section 3).

Local Perspective

It is intended that the water quality of the catchment should be of good or very good quality to be able to support a thriving salmonid fishery. As a consequence we have set an LTRQO of RE Class 1 for the majority of the catchment. Exceptions to this are:

RE Class 2 - the Llynfi downstream of Caerau
the tributaries of the Alun

ENVIRONMENT AND WATER QUALITY

The current quality of most of the catchment achieves RE Class 1, although other RE Classes are found as follows:

RE Class 2	-	a stretch of the Upper Garw the Ogmore in Bridgend the Ewenny Fach tributaries of the Alun
RE Class 3	-	the Llynfi downstream of Lletty Brongu Sewage Treatment Works
RE Class 4	-	Stembridge Brook

Aim To provide water quality suitable to support a healthy River Ecosystem appropriate to the type of river.

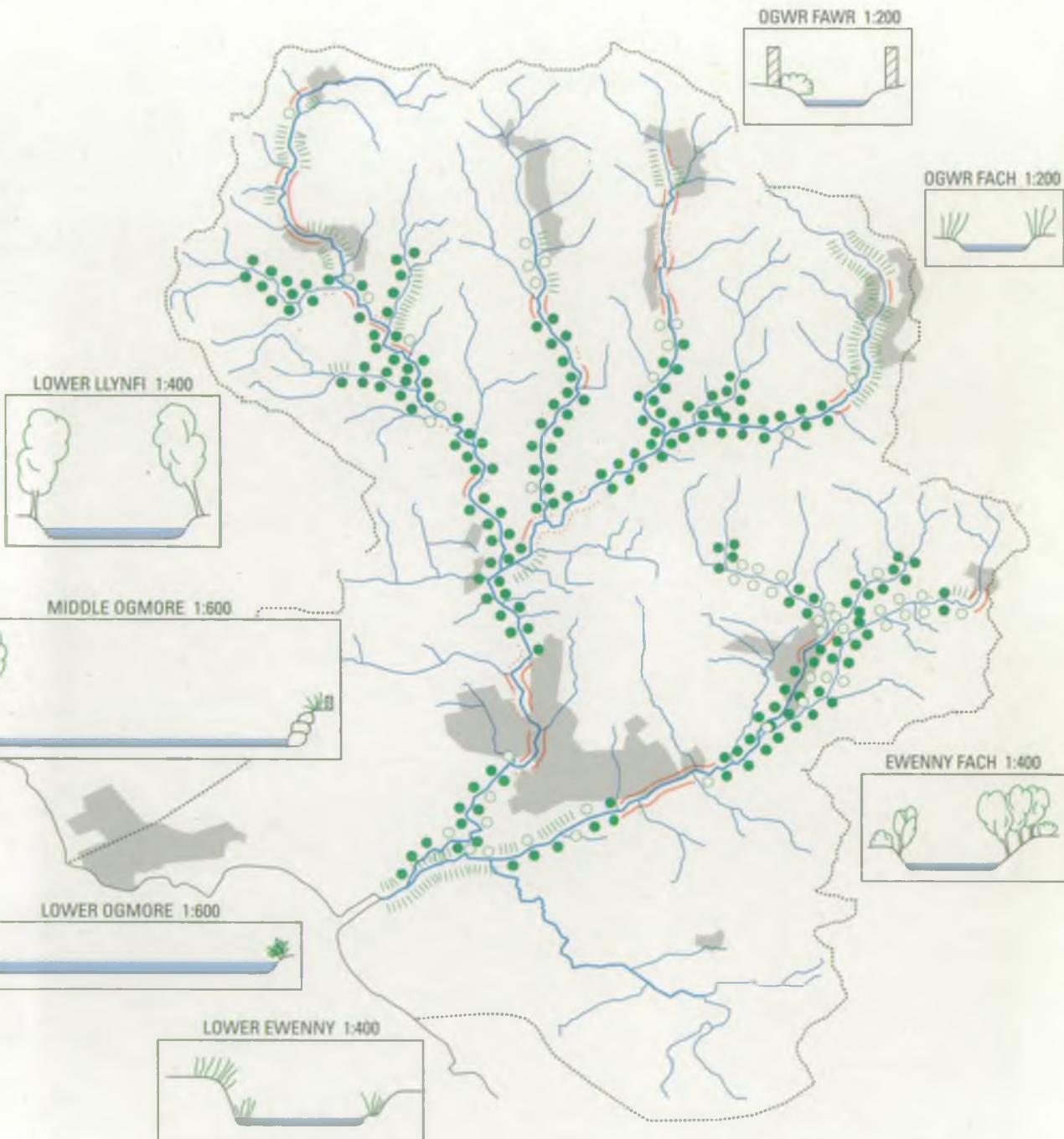
Environmental Requirements:

Water Quality	Waters should comply with the appropriate standards, applied formally or informally, under the Surface Waters (River Ecosystem) (Classification) Regulations 1994.
Water Quantity	The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.
Physical Features	An appropriate diversity of natural instream and bankside habitat should be maintained to support the Ecosystem typical of this river type.



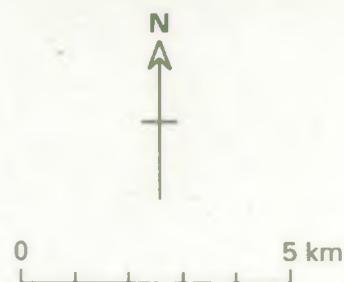
GENERAL ECOSYSTEM

MAP 8.



KEY

- DOMINANT BANKSIDE FEATURE (500m^{-1})**
- ARTIFICIAL BANK (BLOCKSTONE, GABIONS ETC)
 - ARTIFICIAL BANK SUPPORTING VEGETATION
 - ||||| GRASSES AND HERBS
 - LOW TREE AND SHRUB COVER
 - HIGH TREE AND SHRUB COVER



2.6 GENERAL ECOSYSTEM

General Information This Use relates to the protection of aquatic flora and fauna along with dependent organisms in the river corridor. In this context, dependent organisms are those which rely, at some stage of their life cycle, on the aquatic and bankside environment.

This basic Use is applied to all controlled waters within the catchment and provides protection to the aquatic environment from substances identified as "Dangerous to aquatic life" under the EC Dangerous Substances Directive. There is also a requirement to protect physical features and water quantity at appropriate levels.

Where areas of the catchment are important for more specific ecological reasons their protection/development is dealt with in the specific Use related chapters that follow and suitable, rigorous water quality standards will be applied.

Local Perspective The upper reaches of the Ogmore are typically 2 - 3 metres wide with depths less than 0.3m. Cobble dominated riffles and shallow pools characterise these areas. The river widens to around 10m in the middle reaches, approaching a maximum of 30m in the lowland sections where flows are characterised by riffles and runs. Bankside vegetation is dominated by Alders with Willow, Oak, Ash and Sycamore also present. Bank protection, particularly blockstone, has reduced tree cover over extensive lengths of the Ogmore, Llynfi and Ogwr Fawr. In-stream vegetation is generally sparse, as would be expected from a river system with such a mobile bed.

The Ewenny ranges from 1-16m in width with in-stream features similar to that of the Ogmore. In contrast to the Ogmore, the lower reaches of the Ewenny support extensive stands of marginal plants which provide high conservation value. Extensive lengths of the Ewenny have tree-lined banks with the exception of the canalised reach at Waterton.

Habitats adjacent to the river include small areas of wetlands, ancient woodland and isolated groups of trees protected by Tree Preservation Orders (at Pencoed, Ewenny and Hernsten, north of Ewenny).

ENVIRONMENT AND WATER QUALITY

The River Corridor Survey (RCS), completed in 1993, has highlighted the degradation of many natural riparian habitats as a consequence of flood protection works. This in turn is likely to impinge upon the success of populations of birds, such as kingfishers and sandmartins, and animals such as otters.

Invasive plants, Himalayan Balsam and Japanese Knotweed, occur extensively throughout the catchment. 75% of RCS sites visited in 1991 and 1992 had been colonised by either or both of these species. The Nant Iechyd was the only tributary where the plants were not recorded.

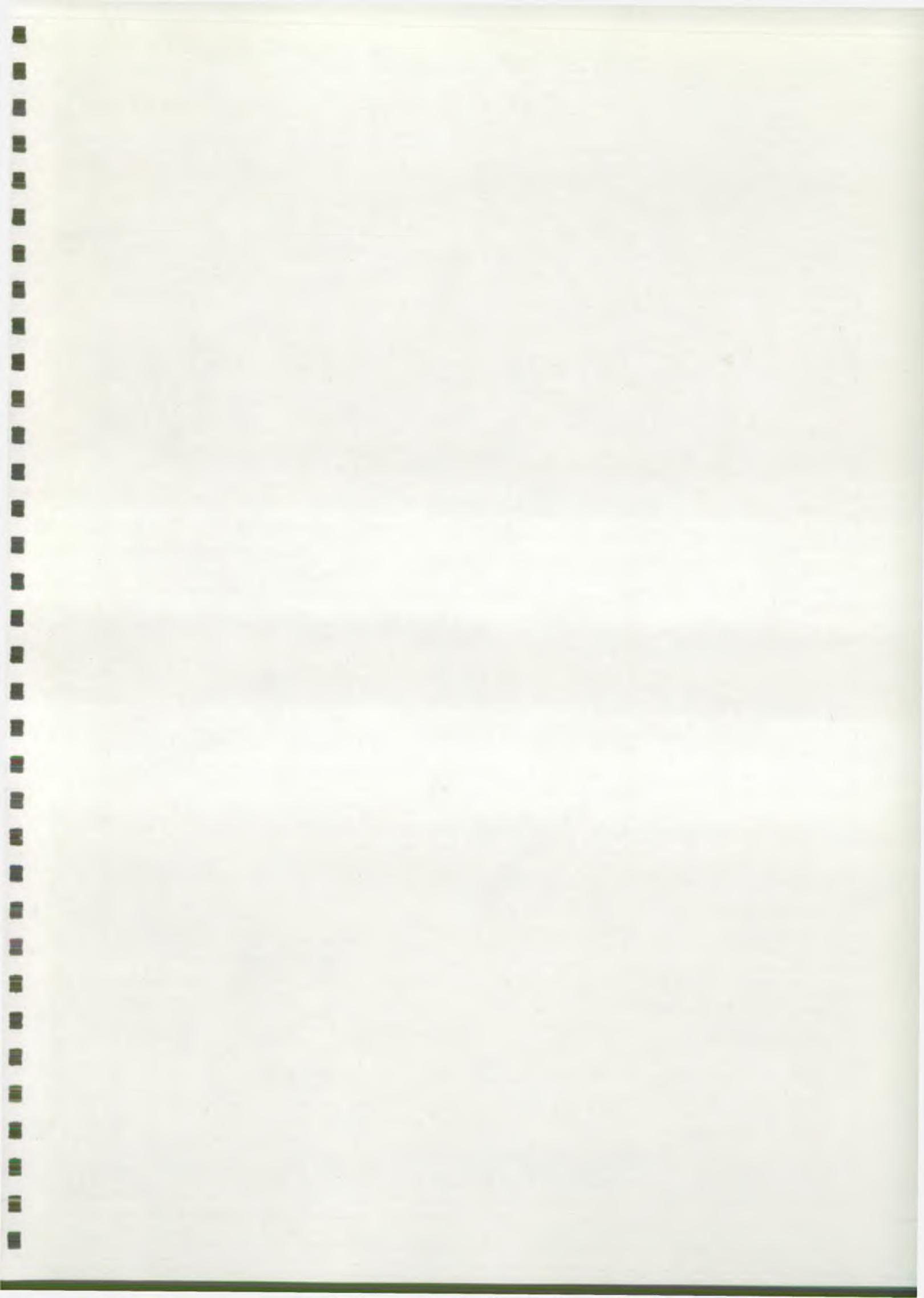
Aim To protect the basic general ecosystem associated with the aquatic environment and its associated corridor.

Environmental Requirements:

Water Quality Waters should comply with requirements of the EC Dangerous Substances Directive.

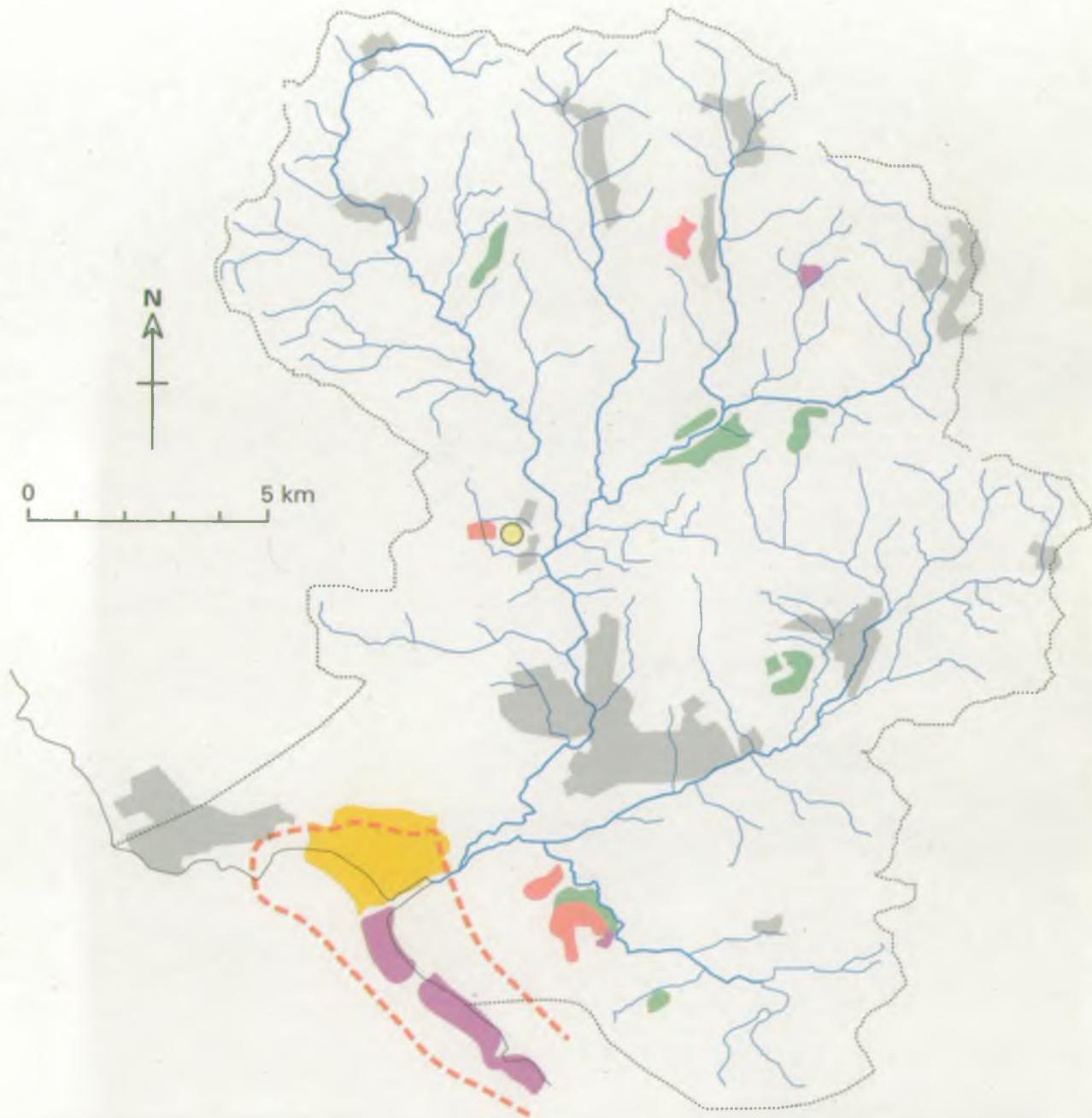
Water Quantity The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Physical Features The diversity of natural instream features and river plants and animals should be maintained and enhanced.



SPECIAL ECOSYSTEMS

MAP 9.



KEY

- CATCHMENT BOUNDARY
- - - HERITAGE COAST
- Yellow box SAND DUNES
- Green box WOODLANDS
- Purple box GEOLOGICAL SITES
- Red box GRASSLANDS
- Yellow circle PARC SLIP NATURE PARK (INCLUDES PARK POND GLAMORGAN WILDLIFE TRUST RESERVE)

SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI's):

1. Merthyr Mawr Warren
2. Sutton Flats
3. Southerndown Coast
4. Old Castle Down
5. Alun Valley
6. Coed y Bwll (includes Glamorgan Wildlife Trust Reserve)
7. Clementstone Meadow
8. Coedymwstwr Woodland
9. Cwm Risca Meadow
10. Blackmill Woodlands
11. Cwm Caeur Mawr
12. Cwm Du Woodlands
13. Cwm Cyffog
14. Darren y Dimbath

2.7 SPECIAL ECOSYSTEMS

General Information Special ecosystems are regarded as those areas that are formally designated for their high conservation value. Such areas include National Parks, National Nature Reserves (NNRs), Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation and Special Protection Areas designated under the EC Habitats and Birds Directives.

This Use is extended to sites that are valuable in conservation terms but are not formally protected e.g. Nature Reserves and County Trust Sites and other non-statutory nature reserves.

It is possible that a WQO for the Special Ecosystems Use will be introduced by the DoE during the lifespan of this Plan. Proposals by the NRA and English Nature are being considered and will be the subject of separate public consultation.

Local Perspective There are 16 SSSIs notified within the catchment, of which 10 include aquatic habitats or are susceptible to drainage. The limestone heath at Old Castle Down in the Alun Valley is considered to be a site of national importance. The Alun is of particular interest, flowing over limestone and under certain circumstances disappearing into swallow holes. Whilst there are no NNRs and the catchment does not include a National Park, most of the coastline and immediate hinterland is designated as Heritage Coast.

Aim To protect the special features interest for which the site has been designated for their ecological or landscape importance.

Environmental Requirements:

Special Conservation Areas are likely to have their own specific environmental requirements for water quality, water quantity or physical features. Currently no designatory agency has identified environmental targets for any sites and, inevitably, consultation would be required before such standards could be implemented.

Water Quality At sites where water quality is a key factor in the protection of a special ecosystem, appropriate standards will be applied.

Water Quantity

The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

2.8 CONSERVATION OF NATURE, LANDSCAPE AND HERITAGE

General Information

The protection of the aquatic ecosystem and designated sites for nature conservation are covered in the General Ecosystem and Special Ecosystems sections respectively. This section deals with the broader aspects of the conservation of wildlife, landscape and heritage features associated with inland waters but which may be located away from the river corridor.

The landscape and features of conservation or archaeological interest are of great importance in many catchments and may attract large numbers of visitors.

We have a duty to promote and further conservation of flora and fauna while carrying out our business. This includes the protection of water based or associated plants and animals that are so vital to the water environment. We also have to pay regard to any features of natural beauty or interest and must also consider the desirability of improving access to these features.

Exceptionally beautiful landscapes may be protected by being designated as National Parks or as Areas of Outstanding Natural Beauty (AONBs), for which we are an informal consultee.

Sites of historic or heritage interest may be classed as Scheduled Ancient Monuments (SAMs) or as 'listed buildings' which have statutory protection, but can be any feature of interest.

Local Perspective

Evidence of otter activity has been recorded in the middle and lower reaches of the Ogmore and Ewenny and further colonisation by this mammal throughout the catchment is expected in future years. The Ogmore has been designated as a priority catchment in our draft Otter Strategy and, as such, a structured plan will be drawn up with the relevant organisations and local groups to identify and protect existing sites important to otters and to identify opportunities to improve otter habitat within the catchment.

Kingfishers and sandmartins breed throughout the catchment where eroding sandy banks provide suitable habitats.

A major land reclamation scheme in the Upper Garw Valley, designed to enhance the landscape and economy of the valley, has necessitated the diversion of the Garw. In this case, the inclusion of features to create varied habitats within the new watercourse should reinstate this productive river, but river diversions should generally be viewed as a last

resort in respect of all developments. A similar scheme has been undertaken on the Ogwr Fach where extensive bankside revetments were deemed necessary in order to prevent landslips.

Proposals for further land reclamation schemes may provide opportunities for improvements in degraded areas particularly in the Ogwr Fawr and upper Llynfi and additional threats in the form of opencast mining proposals also exist.

Over 80 sites of known archaeological interest are associated with the river corridor on the Ogmore catchment. These include castles, wells, mills, weirs, bridges and viaducts.

Aim To ensure that wildlife, landscape and heritage features of interest (particularly designated sites) are protected and, where appropriate accessible.

Environmental Requirements:

Water Quality Generally there will not be any specific water quality requirements to protect landscape or heritage sites although water around such public places should conform with the standards used to protect the General Ecosystem Use.

Water Quantity The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Physical Features Physical features that give rise to natural beauty should be protected.

Sites and buildings of interest should, where cost-effective, be protected from damage by flooding and/or drought.

2.9 ABSTRACTION

General Information

The removal of water from streams, rivers or groundwater by man is termed **abstraction**. The various uses to which the water is put are all grouped under this general heading. Abstractions are controlled by licences granted under the Water Resources Act 1991. The abstraction licensing process ensures that we can manage water resources so as to ensure that the right balance is struck between the needs of abstractors and the environment.

Exemptions from the requirement for a licence include most types of water supplies to a single household, and small (not more than 20 cubic metres a day) general agricultural uses from surface water (excluding spray irrigation) - see table in Appendix 2. Also, large areas of North and West Wales are exempted from the licensing requirement for abstractions from groundwater (wells and boreholes), regardless of use. There are a number of other specific types of abstraction (e.g. firefighting) which are exempt from the need for a licence. The requirement for an abstraction licence is shown in Appendix 2.

All abstraction licences specify maximum volumes that the licence holder may take, and many contain conditions to protect the environment and other abstractors. The exceptions are licences granted as Licences of Right in 1965, or "Licences of Entitlement" in 1990 where the legislation did not permit us, or our predecessors, to restrict pre-existing abstractions.

In considering applications for new licences, we must ensure that there is no derogation of existing abstractors without their agreement, and that the aquatic environment and associated habitats are properly safeguarded. We do not guarantee that the authorised volume will be available, nor that the water will be fit for the purpose for which it will be used.

We have a duty to protect the quality of water resources and will specify zones or areas around sources that will seek to control certain potentially polluting activities. The Groundwater Protection Policy (Appendix 1) forms the basis for our activities relating to groundwater. For surface waters we can apply to the Secretary of State to designate protection zones upstream of major abstractions. In such zones risk assessment could identify whether certain chemicals should be prohibited and/or safety procedures improved so that the abstractions downstream, are protected.

Certain types of abstraction have specific issues associated with them, as follows:

Private and Public waters Water Companies provide public water supplies, mainly from surface

Water Supply - rivers, streams and reservoirs - but groundwater sources can be important on a local scale. The Water Companies have the responsibility to ensure that water supplied by them satisfies statutory standards.

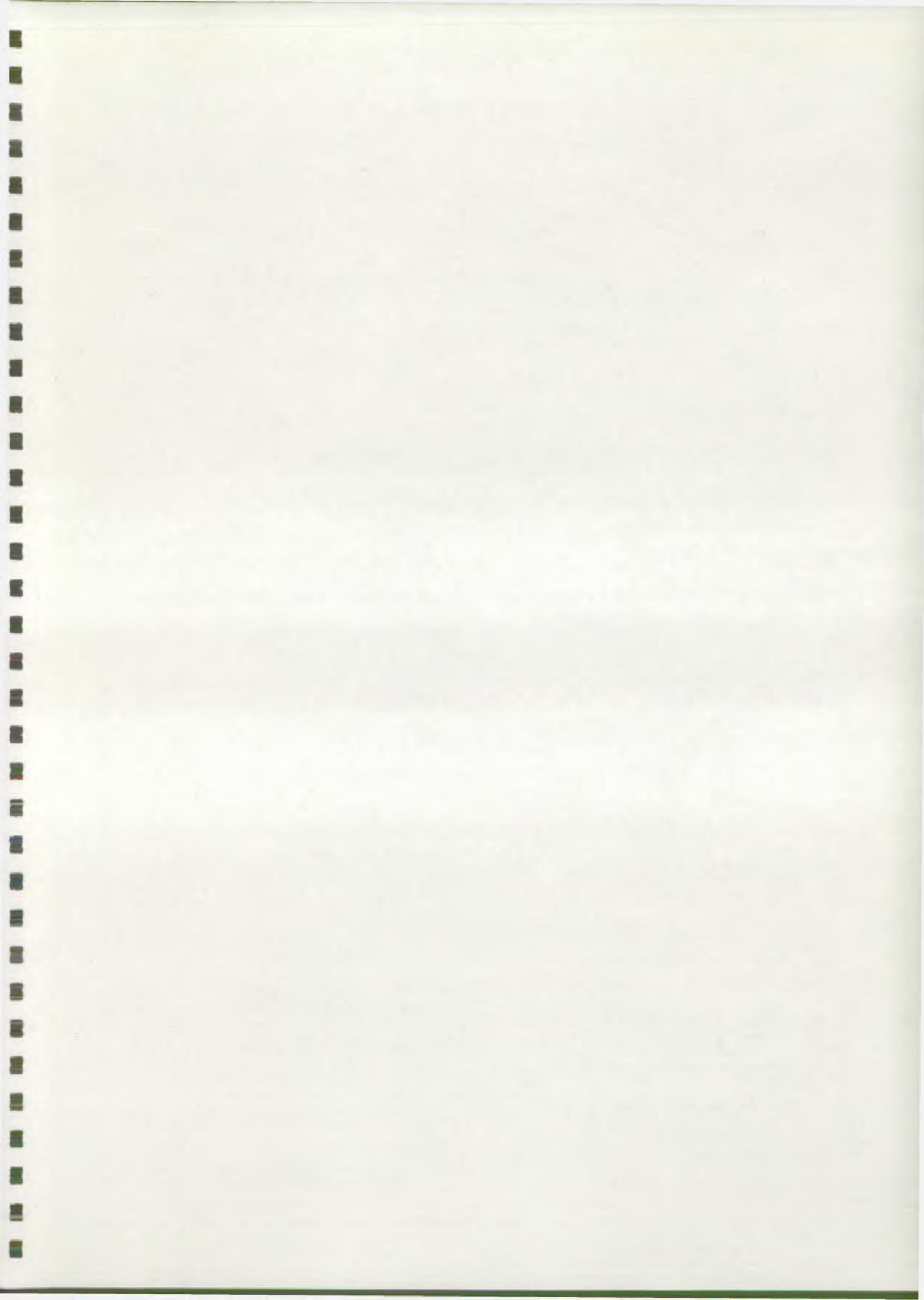
Properties and farms not connected to Water Company supplies obtain their water from small private supplies such as springs and boreholes. The quality of these sources is monitored by the Local Environmental Health Department.

The quality of the raw water, or that of the delivered, treated water is not our responsibility. However, we do have a duty to protect water quality and will specify protection zones around groundwater sources, that seek to control certain potentially polluting activities. The Groundwater Protection Policy (Appendix 1) forms the basis for our activities in this area.

Spray Irrigation Spray irrigation is a high impact use of a water resource and as such is more strictly controlled than other types of abstraction. This is because it takes place during the driest times of year when flows are lowest, and little or no water is returned to the river after use. It is, therefore potentially damaging to the water environment. We encourage winter abstraction into storage and consequently set winter abstraction charges at only one-tenth of those for summer abstraction.

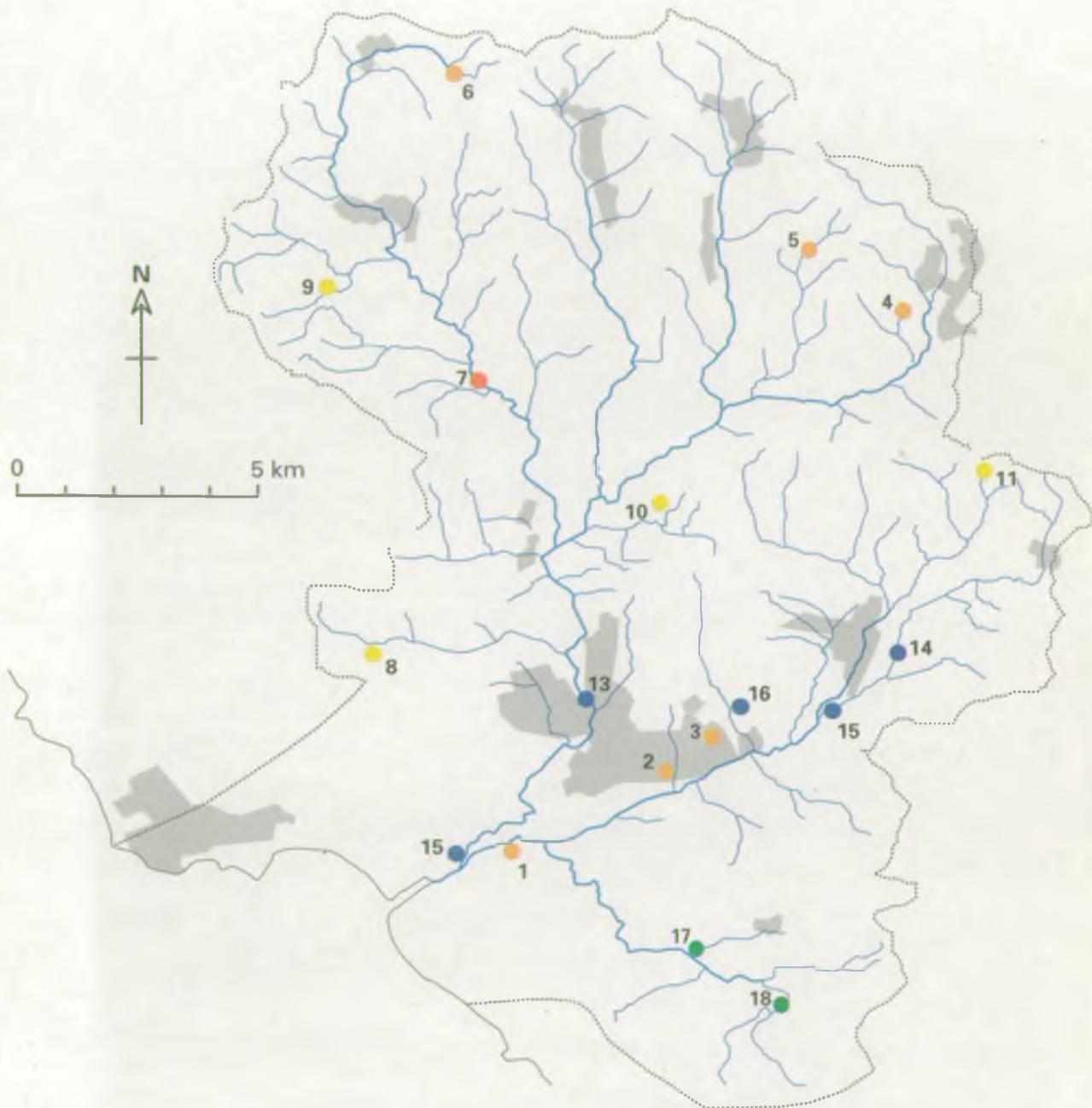
Fish Farming A fish farm is usually a series of off-stream reservoirs in which fish are reared. This can severely affect a watercourse by diverting a large proportion of the flow through the farm. Although all the water is returned downstream, this does mean that a length of the river is reduced in flow. The requirement for an adequate residual flow to protect the river can restrict the viability of a fish farm.

Water Transfer Water is not always used in the same place as it is abstracted from. It may be transferred elsewhere, within or outside the catchment. Transfers clearly represent a net loss of water to the immediate area and so their impact is generally mitigated by the release of regulation or compensation water during period of low flows. All transfers are subject to abstraction licences.



LICENSED ABSTRACTIONS

MAP 10.



KEY

- CATCHMENT BOUNDARY
- DWR CYMRU POTABLE
- 1. Schwyll 7955 ml/a
- 2. Bridgend Industrial Estate 2177 ml/a
- 3. Bridgend Industrial Estate 2177 ml/a
- 4. Hendre Ifan Goch 64 ml/a
- 5. Nant lechyd 10 ml/a
- 6. Llynfi at Blaencaerau 40 ml/a
- INDUSTRIAL
- 7. Llynfi at Bridgend Papermill 6546 ml/a

AGRICULTURE

- 8. Well at Haregrove Farm 3.3 ml/a
- 9. Spring at Caeremig 0.2 ml/a
- 10. Well at Lan Farm 1.7 ml/a
- 11. Nant Llanbad 0.4 ml/a

SPRAY IRRIGATION

- 12. Well at Ton Farm 11.2 ml/a
- 13. Ogmore at Bridgend RFC 10.0 ml/a
- 14. Ewenny Fach at Nurseries 1.1 ml/a
- 15. Ewenny Fach at Nurseries 1.1 ml/a
- 16. Well at Golf Club 11.2 ml/a

AMENITY

- 17. Amenity Pond on Colwinston Brook 165.9 ml/a
- 18. Amenity Pond on Llandow Brook 165.9 ml/a

Industry	Industrial uses of water range from those where water loss is low - such as mineral washing, to those with high loss - such as evaporative cooling. Most large industrial abstractions take water directly from surface and groundwater, but supplies from the public mains may supply water where quality is important.
Hydropower	The energy of flowing water can be used to generate electricity, or to provide the power to drive millwheels. Both uses are growing in popularity in the search for sources of renewable energy, and as old mills are restored. However, the very large volumes of water diverted away from the river can have a significant effect on the in-river flora and fauna and other users of the watercourse, particularly where the points of abstraction and return are remote from each other. All hydropower abstractions require an abstraction licence. Use of water for hydropower can result in appreciable changes in the flow regime which can have a large impact on the downstream channel and its flora and fauna.
Amenity	There is an increasing demand for water to supply a wide range of amenity ponds and lakes to meet needs as diverse as nature conservation and water sports. Water for these ponds and lakes can be taken from ground or surface water supplies and is subject to the normal abstraction licensing procedure. There may also be a requirement for a discharge and/or land drainage consent. Ponds created by the damming of a watercourse will generally require an impounding licence. Many amenity ponds are constructed in flood plain areas and are potentially of concern. We will seek to ensure that such developments and associated works do not affect the natural river regime. To stop the indiscriminate spread of alien fish species and the spread of disease, all stocking of fish into amenity ponds is subject to our normal authorisation procedures.

Local Perspective

Public Water Supply

The major source of potable supply in the catchment is at Schwyll (7955.5Ml/a). This source accounts for more than the aggregate of all other potable sources in the catchment and is derived from spring issues emanating from the Carboniferous Limestone along the axis of the Cardiff-Cowbridge anticline. The most likely recharge area for this supply is south of the coalfield. In addition, considerable recharge takes place through swallow holes. The Ewenny, Ogmore and probably the Alun also contribute to the Schwyll source via seepage along certain stretches.

The total licensed potable abstraction is insufficient to meet the demands of the area. Potable abstraction is augmented from the west by a supply from Llyn Brianne via Felindre treatment works (located outside the catchment, near Swansea).

Potable water surface abstraction only takes place in the headwaters of the Ogmore catchment. This is mainly because widespread deep and opencast mining has, in the past, prohibited abstraction of surface water for potable supply from the middle and lower reaches of the catchment.

Dŵr Cymru Welsh Water (DCWW) is reducing the number of smaller sources in the catchment and potable water supply in the area will probably be supplemented by increased import from the Tywi catchment via Felindre Water Treatment Works.

Agricultural Supply

Only small quantities of water are abstracted within the catchment for agricultural purposes as the upland areas comprise mainly of rough grazing land and forestry. Livestock watering is widespread since unimpeded access to watercourses for livestock is commonplace throughout much of the catchment. There are four licensed abstractions, again taking relatively small amounts, for spray irrigation principally of market gardens in the lower half of the area. The total licensed quantity in this category is only 28 Ml/a.

Amenity Supply

There are two abstraction licences for amenity ponds for 166 Ml/a each, from Llandow Brook and Colwinston Brook. In both cases the abstracted water is returned to the watercourse. Coed-y-Mwstwr Golf Club is authorised to abstract 11.2 Ml/a from underground strata to irrigate the tees and greens, maintain pond levels and supply the clubhouse.

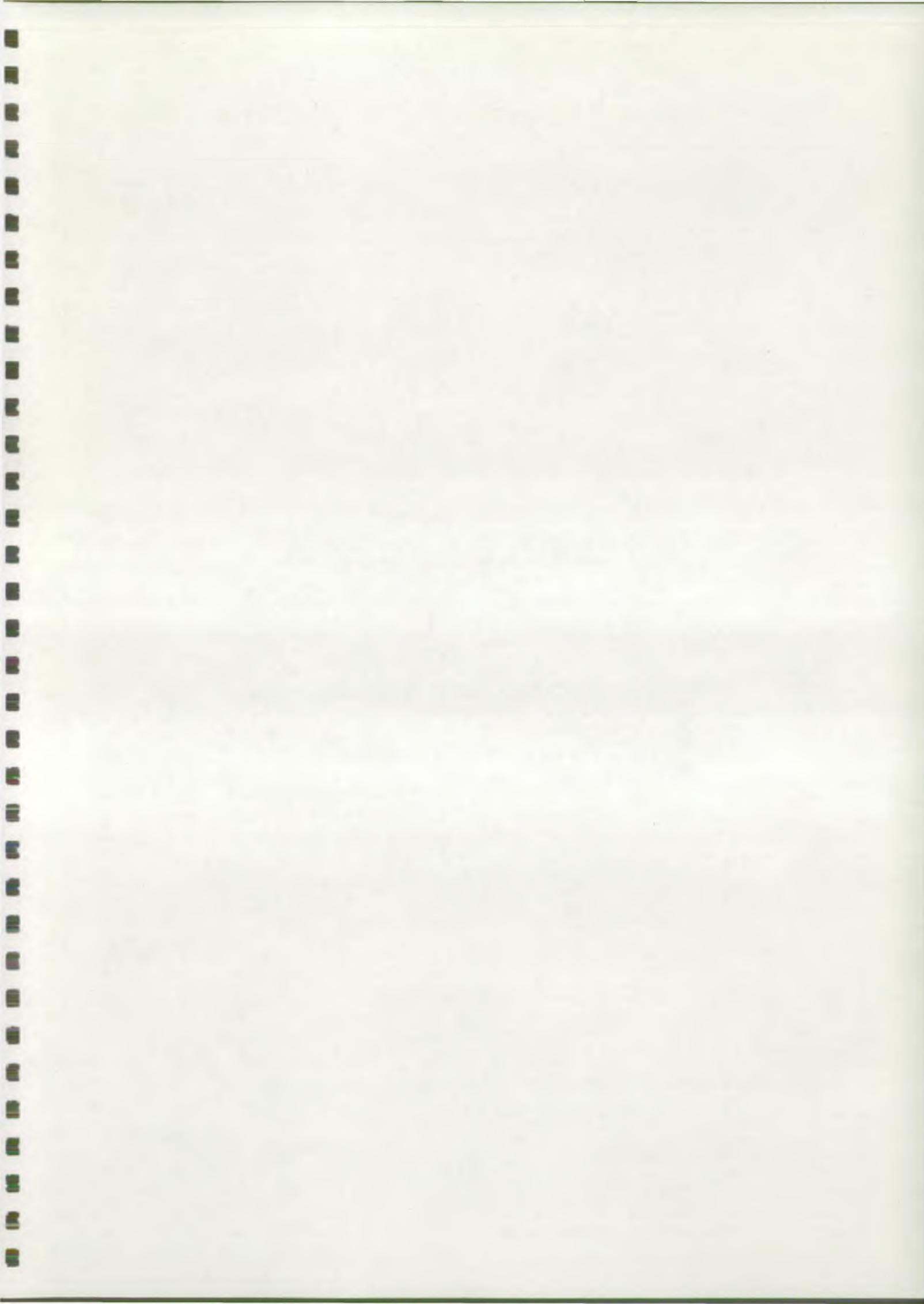
Industrial Supply	<p>Historically the coal industry has been an important industrial abstractor and discharger in the Ogmore catchment. The decline of the mining industry has left the catchment with no deep mines and recently the last remaining coal washery at Maesteg was closed. Although there are no licences for the washing of coal spoil heaps at present, it is a use that can be expected occasionally.</p> <p>The most significant industrial abstraction is from the Llynfi and Nant Gwyn by Jamont Paper Mills (an authorised total of 6546 Ml/a). The abstraction presents operational problems for Jamont Paper Mills during dry spells because the authorised licensed quantity exceeds the flow in the Llynfi, even though the river is supported by the discharge from Lletty Brongu Sewage Treatment Works, sited a short distance upstream. However, Jamont Paper Mills are able to re-circulate process water to maintain production during dry periods.</p> <p>Welsh Water hold licences to abstract 2178 Ml/a from three wells on the Bridgend Industrial Estate.</p>
Aims	<p>To manage water resources so as to safeguard licensed and exempt abstractions and the environment. This includes the active enforcement of abstractions.</p> <p>To encourage abstractions to be made as far downstream as possible and discharges to be made as close to the point of abstraction as is practicable.</p> <p>To encourage efficient water use and to optimise re-use of water.</p> <p>To plan for the sustainable development of water resources, developing criteria to assess the reasonable needs of abstractors and the environment.</p>
Agricultural/Spray Irrigation	<p>To minimise the impact on summer flows of spray irrigation and other forms of nett abstraction.</p> <p>To encourage winter storage abstraction for use in summer.</p>
Hydropower	<p>Hydropower developments that restrict the ability to use upstream water resources will be opposed unless the licence authorising the abstraction is subject to an agreed volume of derogation and a time limit.</p>

Environmental Requirements:

Water Quantity The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Water Quality There should be no deterioration in water quality, below the point of abstraction, due to reduced dilution of authorised discharges.

Waters abstracted for potable supply should conform with the relevant standards of the EC Surface Waters directive.



SEWAGE TREATMENT AND DISPOSAL POINTS

MAP 11.



KEY

..... CATCHMENT BOUNDARY

● SEWAGE TREATMENT AND DISPOSAL SITES

1. Lletty Brongu STW
2. Pencoed Tanker Disposal Point
3. Penybont STW
4. Wick STW

0 5 km



2.10 SEWAGE EFFLUENT DISPOSAL

General Information

In Wales most sewage effluent is discharged into freshwaters having first been treated in a sewage treatment works (STW) or smaller facility such as a septic tank. However, some untreated sewage is occasionally discharged into rivers from overflows on the sewerage system. The overflows act as safety valves to stop the treatment works being overloaded or the sewerage system damaged and also to prevent flooding of property. They are designed to operate only under storm conditions when river flows are high. We regulate all these types of discharge and monitor compliance with their consents. In order to protect the water environment these consents may contain conditions that variously specify the quantity, quality or circumstances of effluent discharge. In Wales, Dŵr Cymru Welsh Water handles the bulk of sewage effluent discharged to freshwaters, although the greater number of STWs are privately owned.

Coastal sewage discharges which serve the majority of the population of Wales, are also generally owned by Dŵr Cymru Welsh Water although at present few of them receive the level of treatment associated with freshwater discharges.

In Welsh Region, the continuing improvements in sewage effluent treatment and disposal facilities feature highly in Dŵr Cymru Welsh Water's second Asset Management Plan (AMP2), which has been produced in close liaison with us. This plan specifies the capital investment required for Dŵr Cymru Welsh Water's assets (mainly to ensure compliance with the EC Urban Wastewater Treatment Directive). Consequently, we have, over the past two years, assessed the environmental impact of every Dŵr Cymru Welsh Water owned STW discharge and those from Combined Sewer Overflows (CSOs) in order to provide a basis for establishing investment priorities. Any sewage effluent related issues identified within this CMP will be considered within the agreed AMP2 programme.

Local Perspective

The majority of sewage collection and disposal in the catchment is undertaken by Dŵr Cymru Welsh Water (DCWW). The two main STWs are Llety Brongu, near Maesteg, on the Llynfi, and at Penybont, downstream of Ogmore Castle on the lower Ogmore. Both of these works have discharges of effluent authorised by NRA discharge consents. The populations served by Llety Brongu STW and Penybont STW are 26,000 and 114,000 respectively. Full secondary biological treatment takes place at both works;

at Penybont by means of an activated sludge process, and at Lletty Brongu by a percolating filter bed system.

DCWW also operates a small STW at Wick in the Vale of Glamorgan which discharges into a tributary of the Alun. Another small STW is located at Llandow Industrial Estate, managed by the owners of the estate. A tanker disposal point, near Pencoed, is operated by DCWW and allows authorised tankers to discharge sewage, including cesspit contents, into the trunk sewer in a controlled manner. The effluent then passes on to Penybont STW for full treatment.

The sewerage system in the valleys dates back to early this century. There are approximately 85 CSOs and these are particularly numerous in the urbanised areas (e.g. 17 in the Maesteg area alone).

The fabric of the old valley sewers is now deteriorating however, and this allows surface and groundwater to infiltrate into the pipework, causing premature operation of the CSOs. This may result in untreated sewage being discharged when there is inadequate flow in the receiving watercourse to prevent unsatisfactory impacts.

Together with DCWW, we are examining which of these CSOs need to be improved as part of a proposed scheme for the area within the DCWW AMP 2 investment period (1995-2000). An improvement scheme is also planned for Lletty Brongu STW within this period.

Aims

To prevent pollution that would affect other uses of water by controlling the disposal of treated and untreated sewage effluent and sludge.

To protect the quality and volume of groundwaters by implementing the NRA's Groundwater Protection Policy.

The NRA would generally seek to ensure that discharges are made as close as possible to the point of abstraction.

Environmental Requirements:

Water Quality Discharges should comply with all conditions stated within discharge consents. This will be enforced by the NRA

There should be no significant deterioration in the quality of waters receiving discharges, beyond that assumed when setting the discharge consent.

Water Quantity Consent conditions will be derived taking into account the upstream dilution available under average and dry weather flow conditions.

The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Physical Features No discharge of sewage from overflows should occur at sewer flows less than those specified in consents.

No reduction in the quality of the physical habitat should occur as a result of the discharge of sewage effluent or construction of the outfall works.

INDUSTRIAL EFFLUENT DISPOSAL

MAP 12.



KEY

- CATCHMENT BOUNDARY
 - INDUSTRIAL EFFLUENT DISPOSAL
1. Caerau Maesteg Land Reclamation Scheme
 2. Blaengarw Land Reclamation Scheme
 3. Gilfach Goch Land Reclamation scheme
 4. Jamont Paper Mills
 5. Rockwool
 6. Llanilid OCCS
 7. Bridgend Industrial Estate

N



0

5 km

2.11 INDUSTRIAL EFFLUENT DISPOSAL

General Information

In many places it is necessary to dispose of liquid wastes from industry into fresh and coastal waters. However, the material discharged can be highly polluting and close control is therefore vital if the water environment is to be protected.

We use a system of "consents to discharge" to control pollution from industrial effluents, at most sites. However, where a site is subject to Integrated Pollution Control (IPC) any discharges will be authorised by Her Majesty's Inspectorate of Pollution (HMIP), in close consultation with the NRA. Within this framework we will seek to ensure that any authorisation issued is consistent with protecting the Uses of the receiving water and also the broader commitment to the reduction of dangerous materials in the environment. Where pollution prevention measures are stated by HMIP these must also be consistent with our pollution prevention policy.

Trade effluent is discharged to sewers with the permission of the sewerage undertaker (Dŵr Cymru Welsh Water in much of the Welsh Region) and is then subject to the sewage effluent treatment and disposal controls outlined in Section 2.10.

Local Perspective

The major industrial discharge in the catchment is from the Jamont Paper Mills at Llangynwyd on the Llynfi. A new effluent treatment plant was commissioned in March 1991 and, as a result of the better quality discharge, there has been a significant improvement in the downstream river quality. The river downstream now achieves River Ecosystem (RE) Class 2 whereas previously it was RE Class 3.

Work to reclaim former colliery sites and their associated spoil tips generates large quantities of site run off contaminated with suspended solids. These discharges are consented by us to ensure the site operators take adequate steps to control the discharges, and treat them to acceptable standards before discharge to the local watercourse. Sites with such discharges are currently operational at Caerau Maesteg, Blaengarw and Gilfach Goch on the Llynfi, Garw and Ogwr Fach respectively.

We have also issued Consents to Discharge to control the discharges of surface water from the opencast coal sites of Llanilid in Llanharan and Park Slip near Aberkenfig. The latter is due to commence work during 1996.

The Rockwool site at Wern Tarw has no direct effluent discharge to watercourse but has previously caused problems due to the contamination of surface water run off. It is now an Integrated Pollution Control (IPC) authorised site, regulated by HMIP. We were consulted over the conditions of the authorisation and carry out monitoring downstream of the surface water discharge on behalf of HMIP.

Several industrial estates cause intermittent problems due to discharges of contaminated surface water. Typical problems include foul drainage entering the surface water system, spillages due to inadequate storage of oils and chemicals, washing down of vehicles and yards and deliberate discharges. Of greatest concern is Bridgend Industrial Estate which covers a very large area and includes a large number of industrial units. The surface water drainage system is extremely complicated and we spend a significant amount of time identifying and preventing pollution problems. Other industrial estates in the catchment also pose a risk to water quality.

Aims To control the discharge of liquid industrial waste to prevent pollution that would affect other Uses of the water.

Environmental Requirements

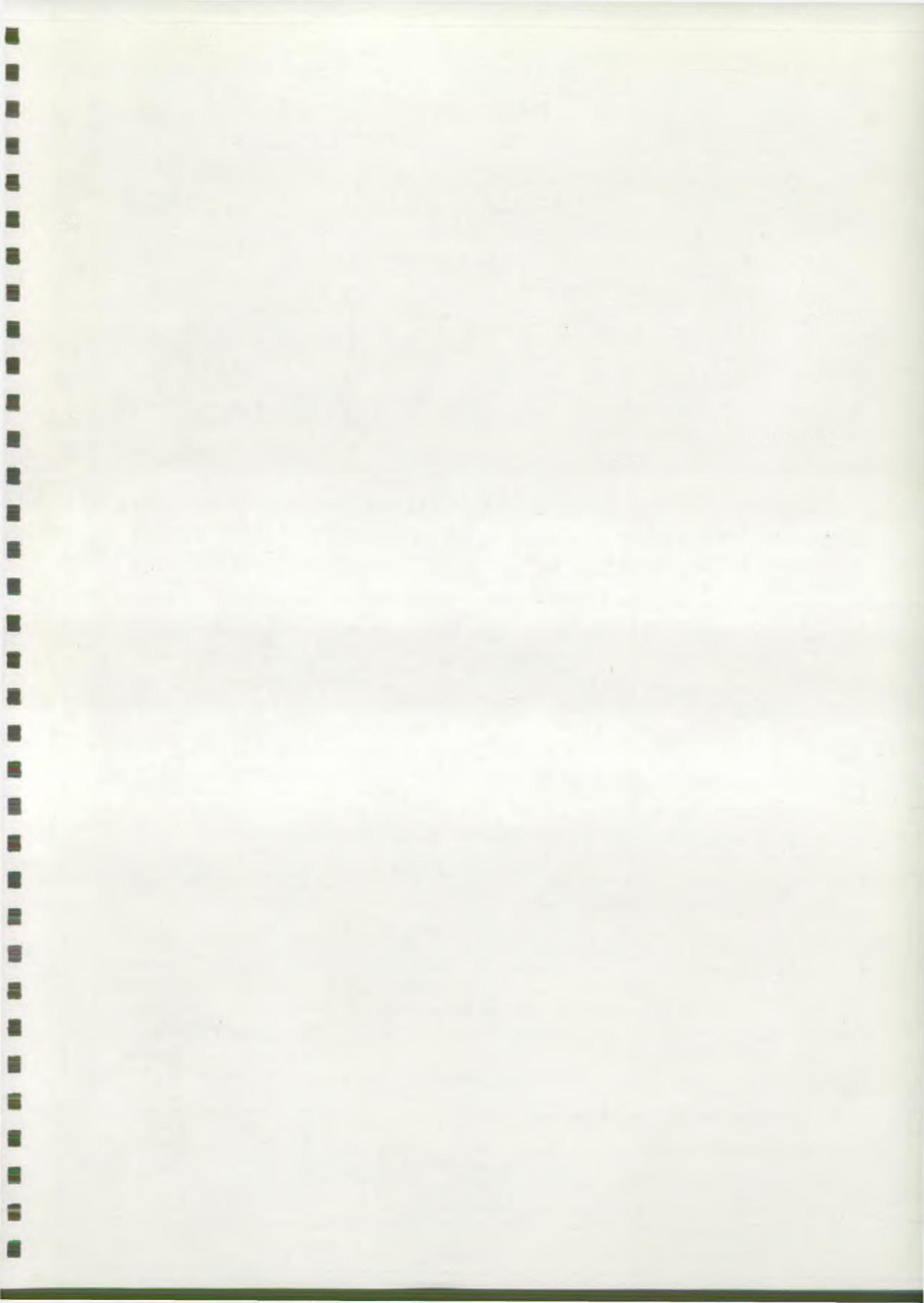
Water Quality Discharges should comply with all conditions stated within discharge consents. This will be enforced by the NRA.

There should be no significant deterioration in the quality of waters receiving discharges, beyond that assumed when setting the discharge consent.

Water Quantity Consent conditions will be derived taking into account the upstream dilution available under average and dry weather flow conditions.

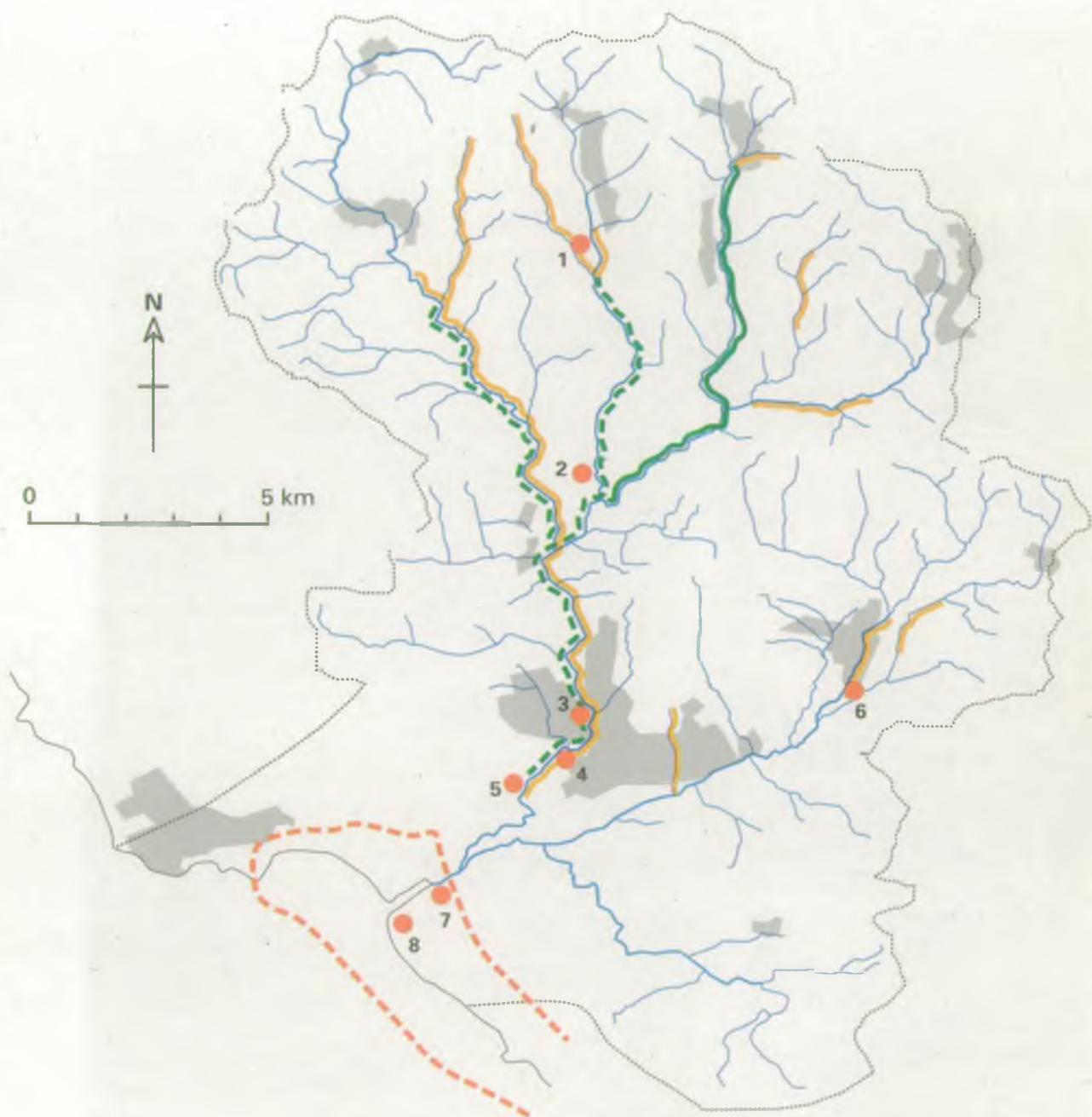
The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Physical Features No alterations should be made to the river channel which would reduce the mixing of the effluent and receiving water.



BASIC AMENITY

MAP 13.



KEY

- CATCHMENT BOUNDARY
- - - HERITAGE COAST
- PUBLIC FOOTPATH AT OR NEAR RIVERSIDE
- EXISTING COMMUNITY ROUTE
- PLANNED COMMUNITY ROUTE

AMENITY SITES

1. Garw Forest Woodland Walk
2. Bryngarw Country Park
3. Newcastle -
4. Newbridge Playing Fields
5. Craig-y-Parcau Woods
6. Pencoed Playing Fields
7. Ogmore Castle
8. Ogmore Foreshore Car Park

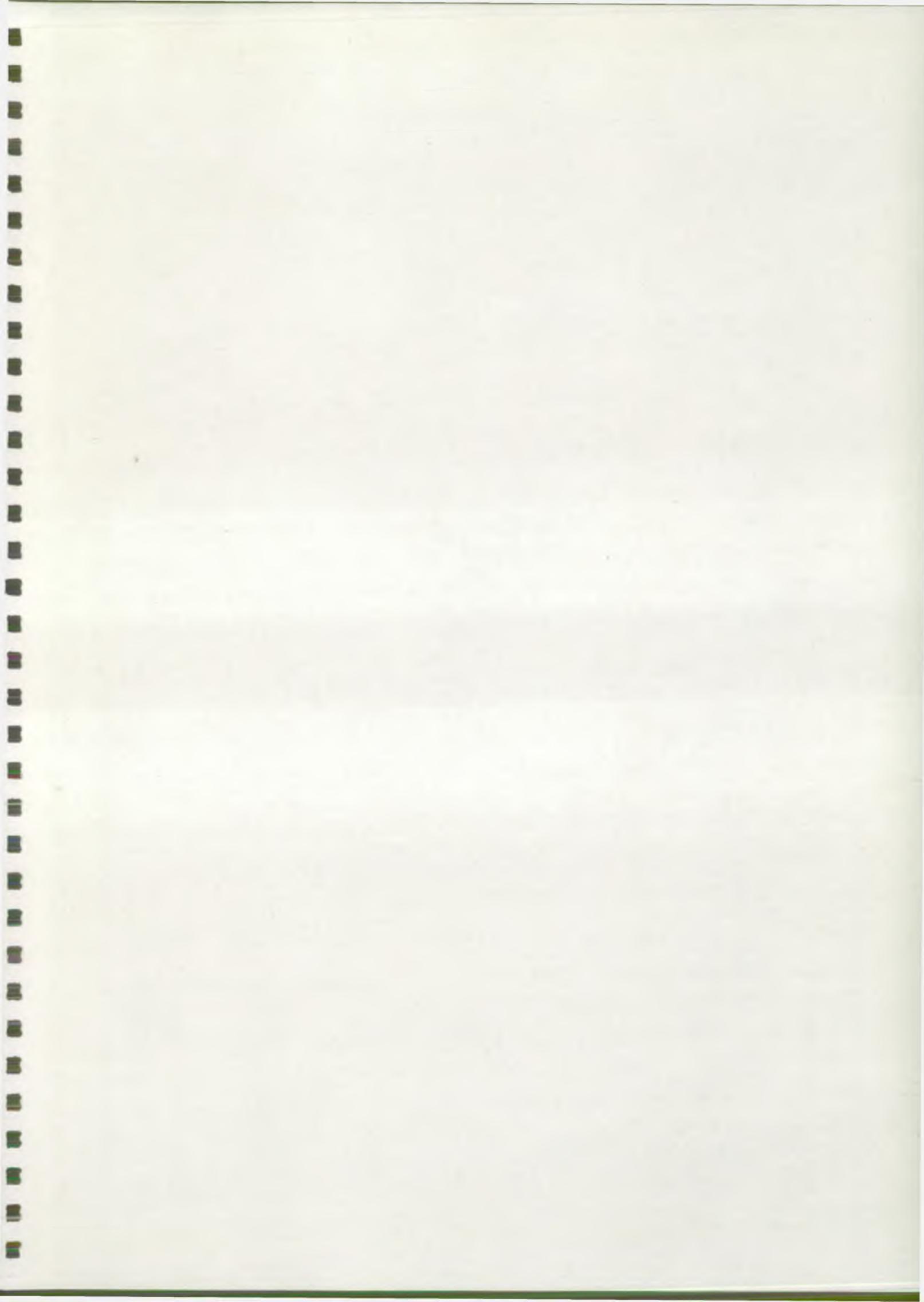
2.12 BASIC AMENITY

General Information	Basic amenity relates to those activities that are principally land based but could by their nature, attract people to the river environment. Examples include walking, picnicking and bird watching. The main areas of concern are therefore the general aesthetic acceptability of the river corridor, access and public safety.
Local Perspective	A population of 139,000 lives within the urbanised river corridors and thus there is substantial existing and potential demand on the use of the river for amenity purposes. Bryngarw Country Park, Craig-y-Parcau Woods, Ogmore Castle and the area of the Glamorgan Heritage Coast are particularly important foci for informal recreation near the river and coast. In addition the local footpath network makes considerable use of riverside walks, some of which are actively promoted. There are a number of missing links in the network and Groundwork Ogwr is currently constructing new community access routes which will enable the public to pass along the valley from one town to the next without using roads. One drawback with these routes in certain areas is the close proximity to the river and the resultant conflict with the anglers.
	Groundwork Ogwr (formally Ogwr Groundwork Trust) was launched in 1990 with the objectives of restoring damaged environments, improving access within the catchment and creating easily managed green spaces.
Aims	To maintain the watercourse so that the public enjoyment of bankside environment is not impaired. To provide safe and easy access to the waterside without unreasonably constraining other Uses.
Environmental Requirements:	
Water Quality	Water quality should be maintained at a level appropriate to prevent aesthetic nuisance.
Water Quantity	The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.
Physical Features	An appropriate network of riverside paths and access points should be maintained and, where appropriate, promoted.

RECREATION

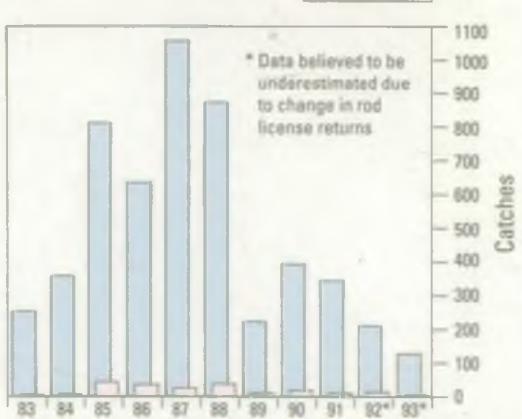
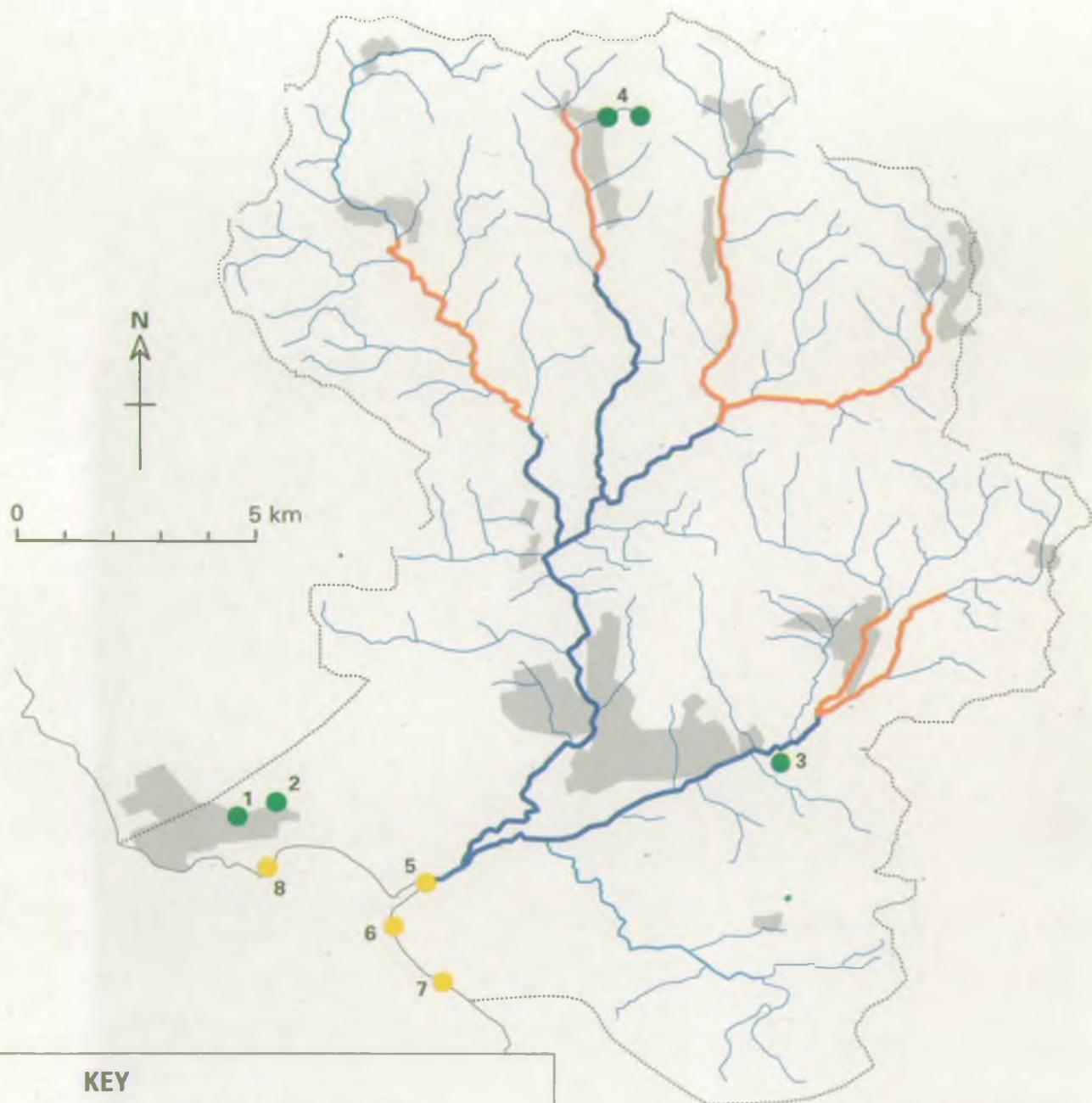
The development of recreational sites should be promoted at suitable locations as opportunities arise.

Development of recreational uses of the catchment should take account their potential impact on the environment and other uses.



ANGLING

MAP 14.



2.13 ANGLING

General Information

This section deals with the recreational activity of fishing with rod and line, rather than the protection of fish stocks. The latter are dealt with in the Fisheries section.

In many ways the requirements for angling are very similar to those for the basic amenity use. However, we do have formal responsibility towards angling, and issue rod licences that are a legal requirement for fishing for any freshwater fish. The income generated by licence sales contributes to fisheries management costs.

Traditionally, in Wales, game fishing for salmon and trout has been the predominant form of freshwater angling, although coarse fishing for other freshwater species is locally popular in many areas. Angling for sea fish takes place at many sites covered by Catchment Management Plans. However, we have neither control of, nor responsibility for, sea angling and it is not covered specifically in CMPs.

Local Perspective

The main river fishing interest in the catchment is targeted at sea trout, which generally migrate during the period April-September. Catches, which have been recorded since 1975, increased progressively until the major pollution incident in 1987 which contributed to a dramatic decline in 1989. Signs of a recovery are now evident. More salmon are also now taken, though in fewer numbers than sea trout. Since the commencement of the stocking programme, the relative importance of salmon in the total angler's catch has increased. River brown trout fishing is also popular, particularly during the early part of the season. Stocks of brown trout are supplemented by club stockings in order to satisfy the anglers' needs.

One of the major threats to the angling potential of the catchment during recent years has been the disturbance caused by land reclamation and other in-river works. Such schemes can result in discoloured water and the resultant loss of amenity value to anglers. These major schemes have resulted in the creation of pools and lakes which may be of benefit to anglers in the future.

Coarse fishing in the catchment is restricted by the paucity of natural populations of catchable fish. Pwll-y-waun and Wilderness Ponds have been developed as successful club controlled match, pleasure and specimen waters. Treoes Lake was opened in 1994 following its creation by the Glamorgan Anglers Club and stocking with a variety of species with assistance from the NRA.

Sea angling is undertaken throughout the year in the coastal area of the catchment with favoured locations including the Ogmore Estuary, Ogmore and Newton Beaches and Ogmore Deep. The litter deposited by anglers at these locations is a cause for concern in that it detracts from the aesthetic appeal of such spots and endangers wildlife.

Aim To ensure that the water environment can sustain angling at least at its current distribution and quality.

Environmental Requirements:

Water Quality Water quality should be maintained at a level appropriate to prevent aesthetic nuisance.

Water Quantity The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

Physical Features Safe access to and from the waterside should be promoted.

The waterside features required for angling should be maintained and developed.

2.14 WATER SPORTS ACTIVITY

General Information

Waters used for sports and recreation fall into two broad categories; Identified Bathing waters and Water Contact/Recreational Use waters. Each category is treated separately below.

It is possible that in the future this Use will be included within the proposed scheme of Water Quality Objectives being developed by the DoE.

Identified Office Bathing Waters

To be identified by the Department of The Environment (DoE)/Welsh (WO) as falling within the terms of the EC Bathing Waters Directive (76/160/EEC), several criteria are taken into consideration including: high numbers of bathers, first aid facilities, life guards and toilets. Identified waters are required to achieve the standards of the EC Directive and are sampled according to the DoE/WO guidelines during the bathing season (May to September inclusive). In Wales, these are exclusively saline waters.

Water Contact/ Recreational Use Waters

All waters where water sports occur, other than identified bathing waters, fall into this second category. These could include rivers, stillwaters, estuaries and coastal water and may support activities such as canoeing or water skiing where total immersion is likely, or other non-immersion based recreation. Bathing may also take place. It should be noted that we do not recommend bathing in freshwaters.

Local Perspective

Porthcawl is a popular seaside resort and bathing is a key leisure activity in the coastal part of the catchment. There are two popular bathing waters that are identified under the EC Bathing Water Directive, at Trecco Bay and Sandy Bay. Newton Beach is in private ownership.

Swimming in the estuary mouth of the Ogmore is extremely dangerous due to strong currents and, following several fatalities, is strongly discouraged by the Local Authority. Lifeguard facilities exist at Ogmore-by-Sea and at other popular coastal locations in the catchment.

The catchment is not intensively used for water sports at present, although Porthcawl is a popular venue for surfing events. Water-skiing takes place in Newton Bay under the supervision of the Porthcawl Boat and Ski Club. Safety controls have been agreed with Ogwr Borough Council to avoid conflict between water skiers and other users of the bay, such as surfers, windsurfers, and swimmers.

WATER SPORTS AND NAVIGATION

MAP 15.



KEY

- CATCHMENT BOUNDARY
- UPSTREAM LIMIT OF NAVIGATION
- E.C. IDENTIFIED BATHING WATERS
 - 1. Sandy Bay
 - 2. Trecco Bay
- COASTAL WATERSPORTS
- PORTHCAWL HARBOUR
- CANOEING
- POTENTIAL CANOEING AREAS

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0 5 km

Formal water based recreation on the river is largely constrained by the requirements of the land and fishery owners. The Bridgend Canoe Club and United World College of the Atlantic have entered into agreements with the riparian and fishery interests to canoe in certain stretches of the river, in the vicinity of Bridgend, and at certain times of the year. Further development in this activity is dependent upon agreement with angling and land ownership interests.

- Aim** To ensure that the catchment is maintained to an appropriate standard to support bathing in Identified Waters, and other water sports to at least their current levels of use at existing locations.

Environmental Requirements:

Bathing in Identified Waters

- Water Quality** At Identified Bathing Waters water quality should conform with the standards contained within the EC Bathing Waters Directive and the standards contained in the EC Dangerous Substances Directive.

- Physical Features** Promotion of safe and easy access to and from Identified Bathing Waters.

Water Contact/Recreational Use Waters

- Water Quality** Where marine waters are used for immersion sports, including bathing, we are guided on appropriate standards to protect public health by MAFF and local Environmental Health departments. We are unable to set bacteriological standards in CMPs for freshwaters where immersion sports or bathing take place, but waters should comply with the requirements of the EC Dangerous Substances Directive.

- Water Quantity** The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.

- Physical Features** To protect and, when possible, improve access to contact/recreation waters.

2.15 NAVIGATION AND BOATING

General Information

Navigation is considered to be the use of pleasure and commercial craft in waters that fall under our general control, where a right of navigation exists. This includes the maintenance of navigation aids (such as buoys, perches and marks) which are required for the safe passage of vessels.

In Wales the navigation authority is usually the local port or harbour authority who will liaise with us. However, in the Dee estuary we are the navigation authority. Elsewhere in tidal waters we have neither control over, nor responsibility for navigation.

While we are not the navigation authority for either of the two freshwater rights of navigation that exist in Wales we may under certain circumstances introduce byelaws to control navigational use of a river. We must also pay regard to the needs of those rights of navigation that do exist.

Boating is regarded as the use of boats for pleasure, rather than commercial purposes, and includes rowing, sailing and powered boats where no significant water contact is involved. Where no right of navigation exists, access to and use of the water is by formal or informal agreement of the land/fishery owners and our concern is principally for the participants' enjoyment of the activity.

Local Perspective

Slipways at Ogmore-by-sea and Porthcawl are used to launch water skiing boats and angling vessels. The only permanent moorings used predominantly by commercial and recreational fishing vessels are sited in Porthcawl Harbour, where there is also a RNLI lifeboat station.

No public right of navigation exists in the freshwater reaches of the Ogmore and Ewenny.

Aims

To ensure that waters in the catchment can support boating and related activities to at least their current levels of use at existing locations, provided there is no detriment to other uses.

To encourage and support canoe access agreements on the Ogmore

Ensure that works to the river channel do not prejudice these activities as far as is practicable.

Environmental Requirements:

- Water Quality** Water quality should be maintained at a level appropriate to prevent aesthetic nuisance.
- Water Quantity** The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.
- Physical Features** Where waters under the control of the NRA are used for navigation no obstruction to the passage of vessels should be created.
Any maintenance of navigation channels or aids to navigation should take into account other uses of the water.
Areas used for boating should be protected from development that would constrain this use.
The encouragement and promotion of safe access points for boating, where appropriate.
Features required for navigation or boating should be maintained and enhanced where appropriate. This would include adequate freeboard and freedom from obstructions.

AGRICULTURE AND FORESTRY

MAP 16.



KEY

- CATCHMENT BOUNDARY
- [Green square] CONIFEROUS
- [Yellow square] BROAD LEAVED
- [Diagonal hatching square] ACID SENSITIVE SOIL
ABOVE 300m ELEVATION
- DIVISION OF AGRICULTURAL ACTIVITY IN THE CATCHMENT
To the north small scale sheep and beef operations
dominate while to the south more extensive dairy
and arable farms are common

2.16 AGRICULTURAL ACTIVITY

General Information

The processes and by-products of agriculture are a major potential threat to the water environment, especially in more intensively farmed areas. Our key areas of concern include:-

- pollution by animal and other agricultural wastes;
- contamination of groundwater and surface waters by fertilisers and other agro-chemicals;
- the effects of land drainage on water tables and water courses;
- the impact of uncontrolled stock grazing on river banks.

Where there is a specific discharge of effluent from a farm site this will be dealt with via the general discharge consenting process described in the discharge uses sections. However, the highly polluting nature of agricultural waste normally precludes this option and our approach is aimed at control at source by minimising the volumes of effluent produced and stored. Often it is background pollution caused by large numbers of diffuse discharges that causes the most significant impact and these are of greater concern to us. Consequently we have worked closely with farming organisations to develop waste handling guidelines that seek to control this type of pollution. The Authority can also enforce legal minimum standards for new silage, slurry and agricultural fuel oil installations. In key areas our programme of farm visits helps to alert farmers to potential and existing problems.

We issue codes of practice for the use of fertilisers, herbicides and pesticides, to protect the water environment and, in certain places (Nitrate Sensitive Areas), may control the application of fertilisers to protect groundwater supplies.

Farmers are encouraged to fence riverbanks to prevent uncontrolled access by stock. Cattle and sheep can severely damage riverbanks in a way that can lead to channel instability, increased flood risk and a marked reduction in the fisheries and conservation value of the river.

Fish farming can severely affect a watercourse by diverting a large proportion of the flow through the farm, leaving a length of the river reduced in flow. The requirement for an adequate residual flow can restrict the viability of a fish farm.

Local Perspective

A range of agricultural activity occurs throughout the Ogmore catchment.

In the area located to the north of Bridgend this is limited mainly to small scale sheep and beef operations with a predominance of sheep farming at the higher altitudes. The lower lying more fertile areas to the south of Bridgend, incorporating the Vale of Glamorgan, support a wider variety of operations on a more intensive scale. These include a number of larger dairy units, arable farming and sheep and beef rearing.

It is these dairy units which tend to be the source of most agricultural pollution and problems arising from farm effluent are being identified and addressed. The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 are used, where necessary, to ensure that problem farms install waste management systems of a suitable standard.

Regular monitoring and inspections are ongoing to ensure that pollution arising from any agricultural activity is quickly, and effectively, minimised. These pollution prevention activities tend to be centred on the Nant Ffornwg and Alun tributaries where problems have occurred and continue to be identified.

Other activities associated with arable farming include the use of pesticides and this is of particular importance in the Vale of Glamorgan area which overlies the limestone aquifer feeding the Schwyll Pumping Station. This supplies drinking water in the catchment and is sensitive to contamination over a wide geographical area.

Aims

To protect the water environment from the potential adverse effects of agricultural activity.

To protect the quality and volume of groundwater by implementing the NRA's Groundwater Protection Policy.

Environmental Requirements:

- Water Quality** Discharges should comply with all the conditions stated within the discharge consent. This will be enforced by the NRA.
The codes of practice for the handling and use of Pesticides, Herbicides and Fertilisers should be strictly followed.
Where applicable, the management practices set out for Nitrate Sensitive Areas should be strictly followed.
The Code of Good Agricultural Practice for the Protection of water should be complied with as should the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991.
- Water Quantity** The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.
Agricultural activities must be designed and managed to prevent liquid effluent from adversely affecting the quality of surface and groundwaters.
- Physical Features** Land drainage activity should not adversely affect the fishery and conservation value of rivers.
Agricultural processes should not lead to a reduction in the quality of physical habitats of fishery and conservation value nor increase river instability or flood risk.

2.17 FORESTRY

General Information

Well managed woodland in the right places does not harm the water environment and will often bring benefits. However, in certain circumstances forestry development and management can cause problems. Areas of concern to the NRA, nationally, include acidification, soil erosion, pollution, water yield, increased flooding risks and damage to wildlife habitats.

While we have duties and powers to regulate some forestry works, overall regulation of forestry is the responsibility of the Forestry Authority. In recognition of the potentially harmful impact of poorly managed forest development, the Forestry Authority has published The Forests and Water Guidelines, against which all forest operations are assessed.

We are currently consulted on a non-statutory basis on applications for new planting under the Woodland Grant Scheme (where considered necessary by the Forestry Authority) and in relation to acid sensitive areas documented in the Forest and Water Guidelines. However, we are seeking improved national links with the Forestry Authority to achieve a consistent and effective approach to the general environmental assessment of forestry schemes and operations, including felling and restocking.

To ensure that the water environment is properly considered, we will continue to liaise with Local Authorities, the Forestry Authority and local forest managers about the production of Indicative Forest Strategies, and general forest management issues.

Aims

To protect the water environment from the potentially negative effects of forestry activities.

To encourage forestry practices that improve the water environment.

Local Perspective

The major areas of coniferous forest in the catchment are the Ogmore Forest spreading east from Ogmore Vale to Gilfach Goch, the area around Nant y Moel and the mountain sides between the Garw and Llynfi Valleys. These forests are owned and managed by Forest Enterprise. The majority of trees have been planted since the Second World War and the forests are largely mature. There is minimal new planting and harvesting will continue on a yearly basis into the next century.

Forest Enterprise has recently produced forest restructuring plans which are designed to increase the diversity of species and age distribution of the trees. The felling of conifers alongside watercourses with some replanting of broad leaved trees is currently being undertaken. This will have beneficial effects by increasing the available light to the river ecosystem as well as ameliorating the effects of any acid rainfall.

The only notable areas of broad leaved trees are found to the north-east of the Merthyr Mawr Warren, in the lower Alun Valley, and an area downstream of Blackmill, straddling the Ogmore, which contains an ancient sessile oak woodland.

Environmental Requirements:

The Forests and Water Guidelines should be followed.

2.18

COMMERCIAL HARVESTING OF SEA FISH AND SHELLFISH

General Information

Commercial fishing for sea fish and shellfish is controlled by a variety of laws and EC Directives. The NRA has some responsibility for each type of fishery although we often share this with others, such as Local Authorities, Sea Fisheries Committees and the Ministry of Agriculture, Fisheries and Food (Welsh Office Agriculture Department, in Wales).

Sea Fisheries

Sea fisheries are regulated by local Sea Fisheries Committees who control fishing sites and methods using bylaws that are drawn-up, where appropriate, in consultation with us.

In Wales, the Welsh Office monitors fish stocks and catches and is responsible for the registration of fishing vessels and enforcement of quotas.

Environmental Health Departments monitor the health and quality of fish flesh.

While we have responsibilities in some coastal waters our main concern is the protection of migrating salmon and sea trout, although in some places we have powers (by agreement with local Sea Fisheries Committees) to enforce the protection of bass stocks in coastal waters.

Shellfisheries

Like sea fisheries, shellfisheries (not including crabs, lobsters and other crustacea) are regulated by several different authorities, including the NRA. The shellfish are protected by the provisions of the EC Shellfish Waters Directive that allows us to protect and monitor water quality in designated shellfisheries. However, the Menai Strait is the only commercial shellfishery in Wales that has been designated under this Directive.

Shellfish are known to concentrate materials such as toxic algae, metals and pathogenic bacteria which can be harmful to people who eat them. Thus the quality of shellfish harvested for sale for human consumption is protected by the EC Shellfish Hygiene Directive that is administered by Environmental Health Departments and MAFF (Welsh Office Agriculture Department, in Wales). So far about 30 sites in Wales have been designated under this directive.

Local Perspective The coastal area of the catchment is used by commercial fishermen, mainly from Porthcawl who set pots for crabs and lobsters. Fixed netting is regulated by the NRA and South Wales Sea Fisheries Byelaws in order to protect migrating salmon and sea trout and is only permitted between November and March (inclusive).

Aims To maintain and where possible enhance, marine and shellfisheries.

To protect migrating salmon and sea trout from interference by marine fishing activities.

Environmental Requirements:

Marine Fisheries:

Water Quality Discharges to coastal waters should be controlled to meet the requirements of the EC Dangerous Substances Directive.

Physical Features Marine fishing activities should not interfere with the migration of salmon or sea trout.

The physical marine environment should not be altered in a manner that would affect migratory fish stocks.

To enforce statutory measures that protect bass and other sea fish stocks, where appropriate.

Shellfisheries:

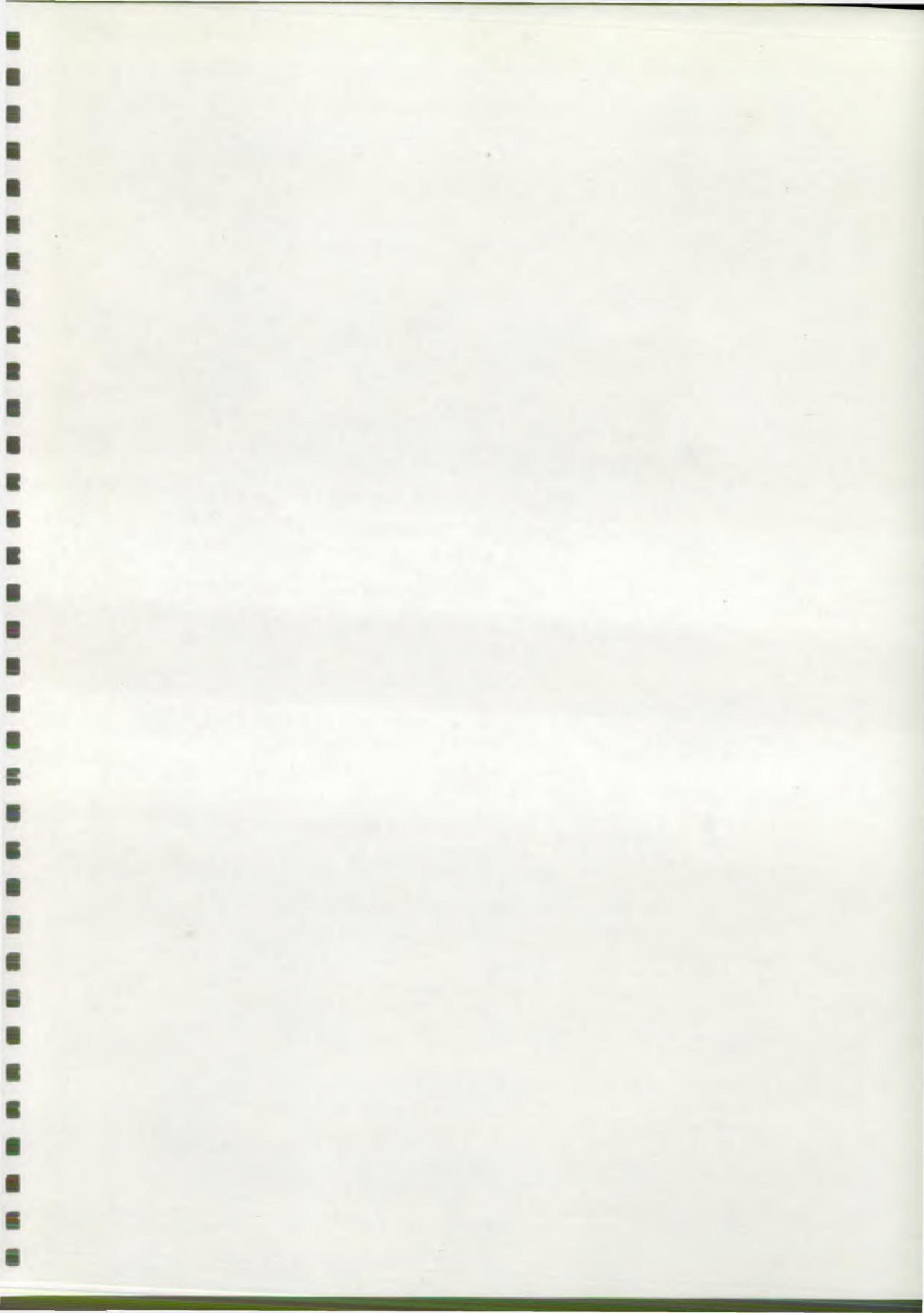
Water Quality Discharges to coastal waters should be controlled to meet the requirements of the EC Dangerous Substances Directive.

Water quality at shellfisheries designated under the EC Shellfish Waters Directive should comply with the appropriate standards. The Shellfish Hygiene Directive has no associated target classes and therefore no Environmental Requirements can be set.

Where a recognised commercial shellfishery has not been officially designated under the EC Shellfish Waters Directive, we will, for the purpose of setting informal targets for Catchment Plans, be guided by the provisions of that directive.

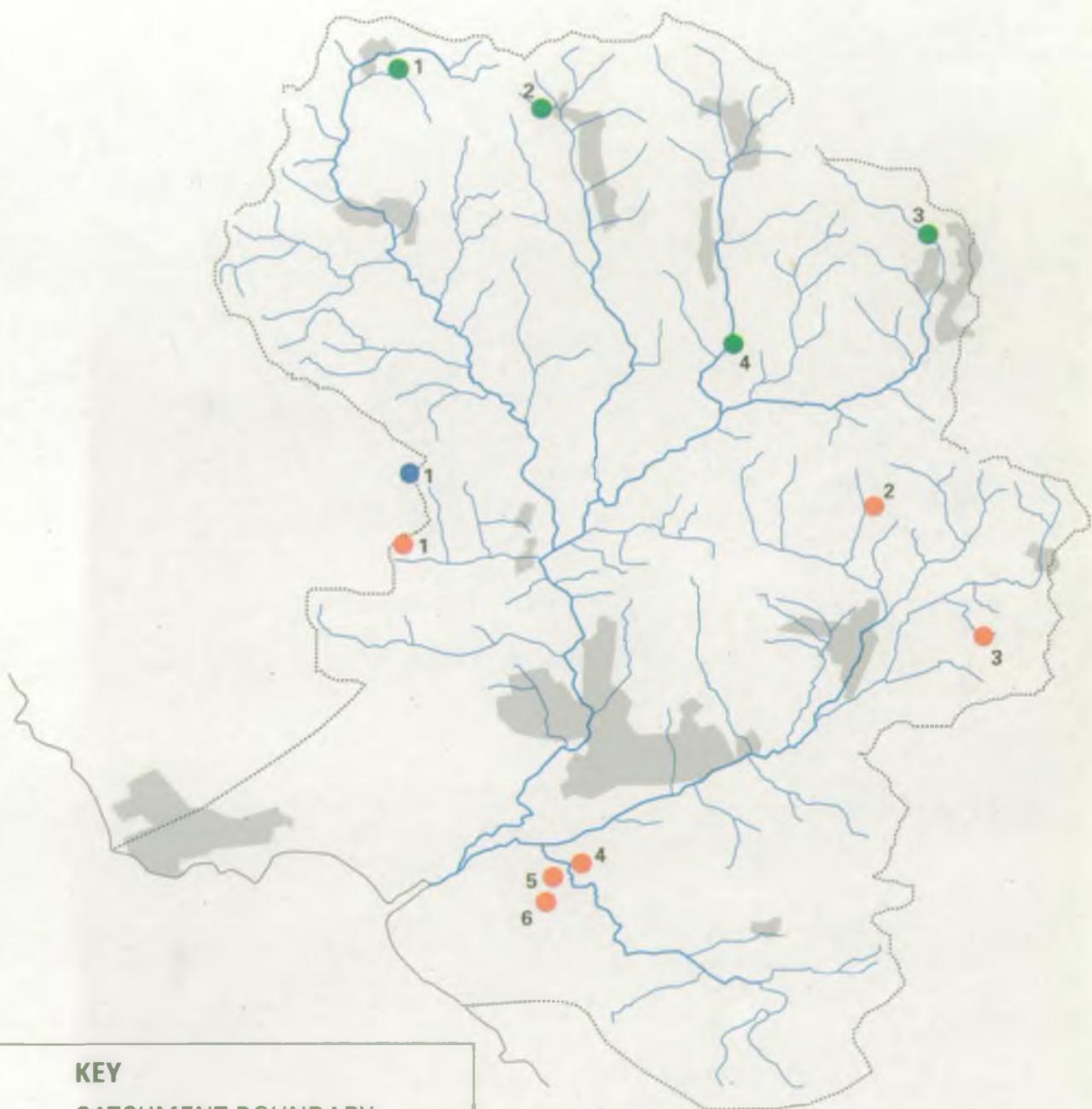
Water Quantity

The NRA has the task of balancing the needs of the environment, with those of abstractors and other users. An abstraction licensing policy has been developed to ensure that this is carried out consistently and effectively for all new abstractions.



MINERAL EXTRACTION

MAP 17.



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2.19 MINERAL EXTRACTION

General Information

Mineral extraction can affect surface and groundwaters in a wide variety of ways. Discharges from active quarries and mines can contain toxic and suspended materials that are harmful to aquatic life and are subject to the normal discharge consenting procedure described in the Discharge Uses section. However, discharges from abandoned mines are not adequately controlled by the law and may cause locally severe problems.

The exploitation of minerals can have major impact on water resources by altering groundwater flows and hence affecting streamflows. The removal of material from above the water table reduces the opportunity for natural filtering and attenuation of pollutants, which will consequently enter groundwater more readily. Summer springflows can be reduced as a result of the loss of the water storage capacity of the mineral that has been removed. Reclamation with impermeable materials will increase run-off and reduce the recharge of groundwaters by rainfall.

Open cast mining can be of particular concern to us. These mines can also affect the fishery and conservation value of long lengths of diverted river as well as groundwater quality and quantity.

Gravel extraction may take place from the river channel or floodplains and is controlled by planning law, but may also require a land drainage consent from the NRA. If works are not properly managed, the river channel can be seriously damaged by gravel removal.

In some areas land reclamation schemes may cause renewed problems as toxic metals are exposed or fine solids run off into watercourses. Consequently, we license and monitor such discharges.

All mineral workings are subject to general planning control and we are consultees on such applications and consider each application on a case by case basis.

Local Perspective**Coal**

There are no active deep mines in the catchment and only one small mine currently operates, at Wern Tarw near Pencoed. However, extensive mining in the past has left a legacy of problems with spoil tips, dereliction and ferruginous minewater discharges. A number of land reclamation schemes have been carried out to improve these sites, and are currently ongoing at Caerau Maesteg, Blaengarw and Gilfach Goch. The scheme at Gilfach Goch is due for completion in early 1995. Work is planned for the Ogmore Vale Washery site during 1996.

Many abandoned coal mines produce discharges of acidic water which contain high levels of iron and other metals. These discharges are currently exempt from normal statutory controls but dramatic discolouration and siltation of the river bed gravels occur, from the precipitation of iron compounds in particular. The Nant Cedfyw, Ogwr Fach, Garw Fechan, Nant-y-Ffyllon and Nant Ton-y-Groes are all affected although the problem is less severe than in some nearby catchments.

Coal is currently extracted by Celtic Energy at the Llanilid Opencast Coal site near Llanharan and this is expected to continue until 1997. Work is planned to resume at the Parc Slip site near Aberkenfig during 1995. Other opencast sites are under consideration but are not expected to become operational during the life of this plan.

Other Minerals

Planning consent has been granted for a small sandstone quarry to provide material for the Caerau Maesteg Land Reclamation Scheme. Work will commence during 1995 and the quarry will remain in operation during the life of the scheme. A similar quarry operates in conjunction with the Blaengarw Land Reclamation Scheme which is not due for completion for at least four years.

Enron Oil UK Limited have submitted plans to start a prospecting well on Mynydd Baiden, 2.5km WNW of Tondu, to investigate the possibility of exploiting reserves of methane contained in deep coal seams.

Limestone is quarried at Pant and Lithalun Quarries and there is a possibility that operations may resume at Ewenny Quarry.

Aims

To ensure that mineral extraction and associated activity, including land reclamation, does not adversely affect the water environment.

To protect the quality and volume of groundwaters by implementing the NRA's Groundwater Protection Policy.

Environmental Requirements:

- Water Quality** All consented discharges must comply with the conditions stated within the consent. This will be enforced by the NRA.
There should be no significant deterioration in the quality of waters receiving discharges beyond that assumed when setting the discharge consent.
Measures must be taken to prevent diffuse pollution that may arise from rainfall run-off.
- Water Quantity** Mineral working and land reclamation should not have an adverse effect on surface and groundwater resources or the rights of licensed water abstractors.
- Physical Features** Mineral working, land reclamation and associated activity should not reduce the quality of the physical habitats available in the water environment.
The aesthetic quality of restored landscapes should be in keeping with the overall nature of the catchment and reflect the local needs for amenity and recreation.

3.0 CATCHMENT TARGETS

In this section we set targets for:-

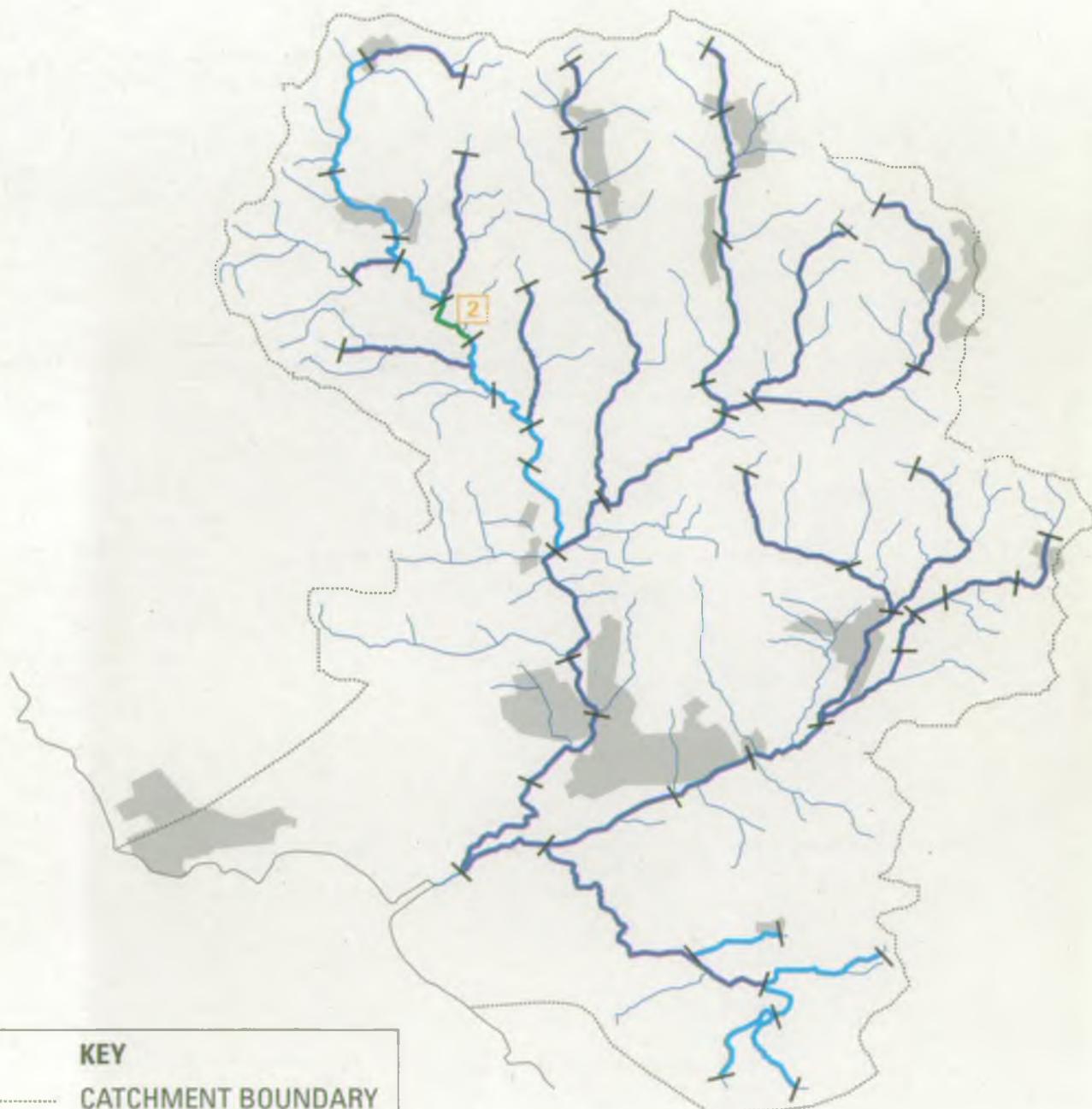
- Water Quality
- Water Quantity
- Physical Features.

These targets reflect the needs of the Uses identified for any area of the catchment and are set using the guiding principles of:-

- Sustainable development
 - Environmental capacity
-

**WATER QUALITY TARGETS -
RIVER ECOSYSTEM (RE)**

MAP 18.



KEY

CATCHMENT BOUNDARY

INTERIM TARGETS:

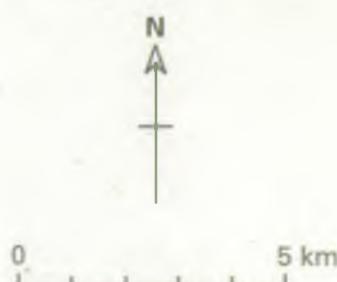
RE CLASS

- 1
- 2
- 3

**LTRQO (WHERE DIFFERENT
TO INTERIM TARGET):**

[2]

— RIVER STRETCHES



3.1 WATER QUALITY TARGETS

General

Section 2 of this report identified the many Uses to which the catchment is put, and the appropriate water quality requirements of each Use. These requirements provide the basis for setting targets to ensure the protection of legitimate Uses.

Targets are commonly derived from water quality standards contained in relevant EC Directives such as those concerning Dangerous Substances, Freshwater Fisheries and Bathing Waters. These targets are applied on a statutory basis in certain parts of the catchment. Elsewhere we may informally apply standards contained within appropriate EC Directive to provide planning targets for the protection of legitimate Uses.

SWQOs

Provision for setting Statutory Water Quality Objectives (SWQOs) in controlled waters was made under the Water Resources Act (1991). The scheme is based on recognised Uses to which a river may be put and includes River Ecosystem, Potable Abstraction, Agricultural/Industrial Abstraction and Watersports. At present only standards for the River Ecosystem Use have been formally developed and were introduced by the Surface Waters (River Ecosystem) (Classification) Regulations 1994.

The Government is currently conducting a pilot implementation of SWQOs following which it is hoped they will be applied more widely. Until then objectives proposed using the River Ecosystem scheme in this CMP will remain informal. They will however, form the basis of our approach to water quality management (replacing the National Water Council scheme). In this CMP we propose two RE objectives for each river stretch. The first, or long-term objective, represents our aspiration for water quality. Attaining this level of quality may not always be possible during the lifespan of a CMP (5-10 years) therefore we also propose a second RE objective. This reflects what improvements in water quality are achievable during the CMP's lifespan and therefore represents an interim objective which will be reviewed periodically. It is these interim objectives which will be given a statutory basis when and if implementation of the SWQO scheme proceeds.

Where Uses are not supported by formal water quality standards we may set informal targets to protect a particular Use. These then provide additional water quality planning targets. Such standards have been developed for example to protect migratory salmonid fish in estuarine waters.

WATER QUALITY TARGETS - GENERAL

MAP 19.



KEY

----- CATCHMENT BOUNDARY



E.C. IDENTIFIED BATHING WATERS

1. Sandy Bay
2. Trecco Bay

— SALMONID WATERS (E.C. DESIGNATED)

— SALMONID WATERS (NON-E.C. DESIGNATED)

— RIVER STRETCHES

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0

5 km

Local Perspective Long Term River Quality Objectives (LTRQOs) of RE Class 1 are intended for all of the catchment, with the following exceptions:

the Llynfi downstream of Caerau
the tributaries of the Alun

for which LTRQOs of RE Class 2 have been proposed.

This reflects the intention that the catchment should be able to support a thriving salmonid fishery.

We expect water quality to be able to meet most of the LTRQO's within the life of this plan. Where this will not be possible, we have set an interim target as follows:

RE Class 3 - the Llynfi downstream of Lletty Brongu STW

This interim target will apply through the life of the plan and ensure that no deterioration in water quality occurs in this stretch.

In addition to the RE targets, standards specified in the EC Freshwater Fish Directive (78/659/EEC) are set as targets for the whole of the main Ogomore and Ewenny, and the Garw, Ogwr Fach and Ewenny Fawr. All of these are EC Designated Salmonid Fisheries. Much of the rest of the catchment, the Ewenny Fach, Ogwr Fawr and Llynfi should also achieve the water quality suitable for supporting salmonid fish and, although these watercourses are not formally designated under the Directive, the appropriate standards of that Directive have been set as informal targets for those rivers.

Where bathing takes place within the catchment, the water quality standards contained within the EC Bathing Waters Directive (76/160/EEC) have been set as targets.

WATER QUANTITY TARGETS

MAP 20.



KEY

CATCHMENT BOUNDARY

- 95 PERCENTILE FLOWS
- 1. Llynfi at Jamont Paper Mill
- 2. Ogmore above Penybont STW
- 3. Alun at Ewenny confluence
- 4. Ewenny Fach at Ewenny Fawr confluence

ml/d

21.7
179.7
11.2
4.6

0 5 km

N

3.2 WATER QUANTITY TARGETS

General

The implementation of the Water Resources Act 1963 required almost all types of abstraction to be authorised by a licence. Pre-existing abstractions had to be granted a Licence of Right in 1965 that reflected the historical abstraction regime and could not take into account its impact. Subsequently, licences have been granted only if they do not adversely affect existing abstractors and the environment, or if conditions can be imposed which restrict their impact.

We take a precautionary approach to the granting of new licences, and will only grant them if we are confident that the available resources are able to sustain the proposed abstraction in the long term without harm to the environment or existing abstractors. We also regularly monitor the compliance of abstractors with licence conditions and enforce them as necessary.

We will adopt an abstraction licensing policy that will allow us to consider, in a structured way, the environmental needs of the river system and to balance these with the needs of abstractors. The policy will permit a review of the volume of existing abstractions in the catchment.

A methodology for the assessment and prioritisation of rivers that suffer artificially reduced flows is already in use. In Welsh Region we will use Catchment Management Plans to assist this process.

We will seek to balance the needs of existing and potential abstractors with those of the environment.

We have powers to limit abstraction and take other conservation measures in periods of drought.

Local Perspective

Both groundwater and surface water sources are used for a variety of purposes within the catchment. Over-utilisation of groundwater sources would ultimately be reflected in a reduction in groundwater levels and spring flows, and subsequent reduction in river baseflow.

The two largest abstractors, Dŵr Cymru Welsh Water at Schwyll and Jamont Paper Mills on the Llynfi, between them comprise 84% of the total authorised abstraction in the catchment.

Flow Requirements

To prosper, the natural river ecosystem requires a certain flow, minimum flow or pattern of flows. While research towards identifying these specific needs is underway, an interim minimum flow has been set. On most rivers this is equivalent to the flow that would, on average, be exceeded for 95% of the time (Q95). Although new abstractions would not generally be permitted to cause flows to drop below this level, rivers will naturally fall below it, from time to time.

Water Level Requirements

At some designated wetland conservation sites we will agree Water Level Management Plans, with the Countryside Council for Wales to manage water levels to meet the needs of the protected ecosystem.

3.3 PHYSICAL FEATURES TARGETS

General

Many Uses are affected by the physical characteristics or features of the river and this is especially true of Uses related to wildlife and its conservation. The habitat requirements of the wildlife associated with rivers are too complex to allow simple targets to be set, even if such habitats could be effectively measured. Consequently until such a time as quantitative physical targets can be set, Catchment Plans will adopt the general theme that the abundance and diversity of physical features typical of the type of river, should be maintained and where possible, improved. This requires subjective assessment by trained staff. To assist this assessment we are developing a habitat classification system and use related targets for physical features such as spawning and nursery sites for fish.

In a similar manner the physical features requirements of recreational Uses of waters cannot yet be quantified in order to set firm targets, again professional judgement must be used.

Flood Defence targets nearly all relate to physical features and the requirement for the river channel to contain certain specified flows at different points in its length.

Local Perspective

There are many Uses in the catchment which have their own physical features requirements. The following requirements are considered targets for the catchment:

Flood DefenceFlood Protection

Where economically, technically and environmentally justifiable, the NRA will aim to maintain or improve in a cost effective manner, designated "Main Rivers" to standards of service (SoS) which accord with the following Land Use bands:

FLOOD DEFENCE TARGETS

MAP 21.



KEY

----- CATCHMENT BOUNDARY

LAND USE BANDS:

- A
- B
- C
- D
- E

N

0

5 km

CATCHMENT TARGETS

Land Use Band	Typical Description of Reach	Reference SoS - Flood Return Period (Years)	
A	Contains residential and non-residential properties distributed over a significant proportion of its length. Amenity uses may be prominent.	Fluvial	Tidal
		50-100	100-200
B	Reaches containing residential and non-residential property over some or all of the reach length but at lower density than Band A. Intensive agriculture may be present.	25-100	50-200
C	Isolated rural communities at risk with limited number of residential properties. Agricultural interests will be more apparent than in band A and B.	5-50	10-100
D	Isolated properties at risk. Agricultural use will probably be the main use with arable farming a feature.	1-10	2.5-20
E	Very few properties at risk. Agricultural use will be predominant with extensive grass land the main feature.	<2.5	<5
X	No recorded areas at risk of flooding.		

Note: The above standards of service table does not imply an entitlement to the provision of this or any standard but is indicative of the standards considered reasonable for the land use defined.

Water Level Management Plans will be prepared for all sites agreed with the Countryside Council for Wales (CCW).

Regulation and Enforcement

The NRA, in its role as statutory consultee under the planning legislation and by use of its consenting powers under the Water Resources Act (1991) and Land Drainage Act 1991(as amended by the 1994 Act), will:

- Ensure provision of suitable access for maintenance of river/channel and sea/tidal flood defence and for the construction of new defences by the limitation of development within 7 m of the top of the river bank (use of byelaws and planning laws).
- Ensure that obstructions to flow do not result in an increased flood risk (consent under WRA 1991 and LDA 1994).
- Ensure development on the flood plain is identified and encourage planning authorities to use the planning process to guide development away from these areas (section 105 (2) survey and W.O. Circular 68/92).

- Ensure that there is no increase in flood risk to existing properties as a result of further development either remote/or adjacent to existing development (catchment planning to manage flows and/or loss of flood plain storage).

Flood Warning

Where flood warning schemes are in place, the NRA will aim to provide a two hour warning of commencement of flooding.

Fisheries

Through our operational, regulatory and advisory activities, and particularly in our role as a statutory consultee to the Local Planning Authorities, we will endeavour to ensure that there is:

- suitable habitat for fish breeding with an adequate distribution of potential redd sites and nursery areas.
- unimpeded access for migratory fish through the estuary and river to and from all potential spawning reaches (where appropriate), with adequate holding pools and cover throughout the catchment.
- effective fish screening on all abstractions and discharges (where necessary) to protect wild fish stocks and prevent escapement from fish farms.

Our intention to set specific targets relating to fish stocks and spawning success was recently announced in our published Fisheries Strategy. We will use the results of continuing fisheries monitoring surveys in the catchment to help in the determination of these targets, as well as data collected from rod and net catch returns.

Conservation

Our developmental national habitat classification scheme, together with the results from the ongoing River Corridor Surveys, will assist in setting specific targets for conservation.

Through our operational, regulatory and advisory activities, and particularly in our role as a statutory consultee to the Local Planning Authorities, we will endeavour to ensure that:

- the current diversity of natural features such as bankside features, wetlands, emergent vegetation, meanders, pools and riffles are maintained in order to conserve river corridors and safeguard landscape quality; improvements are effected and degraded features reinstated where possible. In order to achieve this, water fringe buffer zones should be fenced off wherever possible to protect waterside habitats from damage. Livestock watering points should be clearly defined to protect river banks from

CATCHMENT TARGETS

degradation.

- for each SSSI and NNR potentially affected by our activities, we will agree a "standard of service" that will maintain, and if possible enhance, the conservation value of the site.
- areas of degraded wetland and riverine habitat are identified and, where possible, restored to a level at which they support a range of species typical of similar habitats elsewhere in the catchment.
- the physical structure of archaeological sites and their settings is maintained and, where possible, enhanced, recognising the interdependence of many of the sites and monuments. Where unavoidable change occurs, the original detail of the site should be carefully recorded.
- the survival and, where necessary, reinstatement of threatened fish populations is promoted. This will include not only rare species, but also specific local strains of more common native species.
- control of the spread of Japanese Knotweed and other alien weeds is undertaken as required under the Wildlife & Countryside Act 1981.

CATCHMENT TARGETS

Recreation

Through our operational, regulatory and advisory activities, and particularly in our role as a statutory consultee to the Local Planning Authorities, we will endeavour to ensure that:

- an appropriate network of riverside paths and access points is maintained and, where appropriate, promoted.
- protection is given to existing recreational sites, and that the development of new sites is promoted at suitable locations, as opportunities arise.
- consideration is given to the design of paths, access points and recreational developments, taking into account, wherever possible, the needs of the infirm and disabled.
- provision is made for both canoe touring and white water canoeing, where appropriate, within the catchment.

4.0 THE STATE OF THE CATCHMENT

- This section reviews the current quality of the catchment against the Targets set in **Section 3**.
 - The Targets are designed to protect the needs of the identified catchment Uses.
 - This allows the key management Issues to be identified.
 - These Issues are to be resolved by Actions contained in the **Ogmore Action Plan**.
-

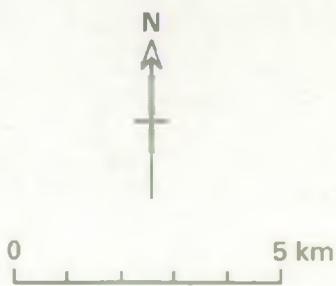
**STATE OF THE CATCHMENT -
RIVER ECOSYSTEM (RE)**

MAP 22.



KEY

- CATCHMENT BOUNDARY
- COMPLIANT
- - - MARGINAL FAILURE
- SIGNIFICANT FAILURE
- ② ISSUE NUMBER
- RIVER STRETCHES



4.1 WATER QUALITY

General

In addition to compliance with water quality targets, we used information from biological monitoring surveys to assess the state of the catchment. Information on the invertebrate fauna found in rivers is particularly useful since the animals present reflect the water quality of the river in the preceding weeks or months, unlike chemical data which presents a series of 'snapshots' of water quality. A further benefit is that invertebrates respond to a far wider range of polluting materials than are routinely tested for by chemical monitoring. We can therefore, use biological data as supporting evidence for issues generated by assessment of chemical quality and to identify new issues which are not detected by chemical sampling alone. Biological monitoring is particularly useful in small streams which are not routinely sampled chemically. In Welsh Region we use biological techniques for the rapid assessment of watercourses affected by acidification (acid rain) and farm pollution. Additionally we employ biological assessments of point sources such as sewage treatment works, industrial sites and mine discharges to identify the need for improvements.

Issues Identified**Issue 1**

Biochemical Oxygen Demand (BOD) concentrations in the Ewenny Fach through and downstream of Llanharan have failed the target for RE Class 1 causing the stretch to fall into RE Class 2. This unsatisfactory quality has been due to periodic discharges from CSOs, caused by sewer blockages, and poor maintenance. As a result of pressure from the NRA, desilting operations have been undertaken which have improved the situation. If the necessary routine maintenance of the sewerage system is carried out, particularly on sections of sewer prone to blockages, the discharges should cease and the RE Class 1 target should be attained within the life of the plan.

Issue 2

The Stembridge Brook is of poor water quality and is classified as RE Class 4 due to low dissolved oxygen concentrations. This is reflected by poor biological quality in this stretch. These problems have been attributed to diffuse agricultural run-off. A farm inspection programme will be undertaken within the life of this plan with the aim of improving the water quality to RE Class 2.

Issue 3

The Llynfi downstream of the discharges from Lletty Brongu STW and Jamont Paper Mill has failed the Long Term River Quality Objective (LTRQO) standard of RE Class 2 (is in RE Class 3 because of elevated BOD levels) and has poor biological quality. The Jamont Paper Mill discharge has been much improved following an investment of £3.2

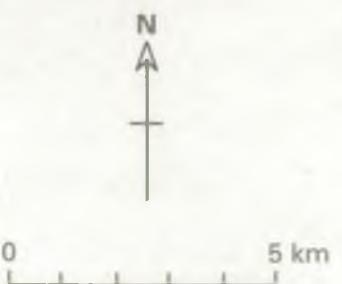
STATE OF THE CATCHMENT - GENERAL WATER QUALITY

MAP 23.



KEY

- CATCHMENT BOUNDARY
- BATHING WATERS STANDARDS ACHIEVED
- POORER THAN EXPECTED BIOLOGICAL QUALITY
- FAILURE OF OTHER WATER QUALITY TARGET
- ① ISSUE NUMBER
- RIVER STRETCHES



THE STATE OF THE CATCHMENT

million in a new effluent treatment plant, commissioned in March 1991. This discharge now has no detrimental effect on water quality. An improvement scheme will be undertaken at Lletty Brongu STW as part of the DCWW AMP2 investment period (1995-2000) and this is currently programmed for completion by the March 1998. Negotiations are currently ongoing between the ourselves and DCWW to ensure maximum environmental improvement, with the aim of the stretch achieving the LTRQO of RE Class 2. The achievement of this target may not be possible by improvements at Lletty Brongu STW alone; the problems with unsatisfactory CSOs on the upstream sewerage system will also need to be addressed (see Issue 12).

Issue 4

Poor biological quality and elevated BOD levels along the length of the Garw are attributed to the Blaengarw Land Reclamation Scheme and the antiquated sewerage system. The LTRQO for the Garw of RE Class 1 is not currently achieved (the stretch being RE Class 2). An improvement in water quality to RE Class 1 is anticipated, along with improvements to the biological quality, on completion of the reclamation scheme and upgrading of parts of the sewerage system during 1997/98.

Issue 5

Monitoring of the Ogmore in Bridgend town centre has demonstrated marginal RE Class 1 failures for BOD, and similar problems in the nearby Morfa Brook. The exact causes are unknown but the issue is likely to be due to urban/industrial run-off and possibly CSOs. The CSO problem will be addressed as part of the DCWW AMP2 investment programme. Investigations into other causes and the extent of the problems has been programmed for 1998. It is anticipated that remedial work arising from these investigations will deliver improvements in water quality and that the LTRQO of RE Class 1 will be achieved within the life of this Plan.

Issue 6

The Sychbant and Lluest Wen, both tributaries of the Llynfi, suffer from surface water acidification, resulting in poor biological quality.

Issue 7

Poor biological quality of the Sutton Brook and the Nant Ffornwg has been attributed to discharges from farms in those sub-catchments.

Issue 8

Poor biological quality of the Llynfi has resulted from the Caerau Land Reclamation Scheme and CSO discharges in the Maesteg area. Mid Glamorgan CC are planning to restart and complete landscaping operations of the Caerau scheme in 1995/96.

Issue 9

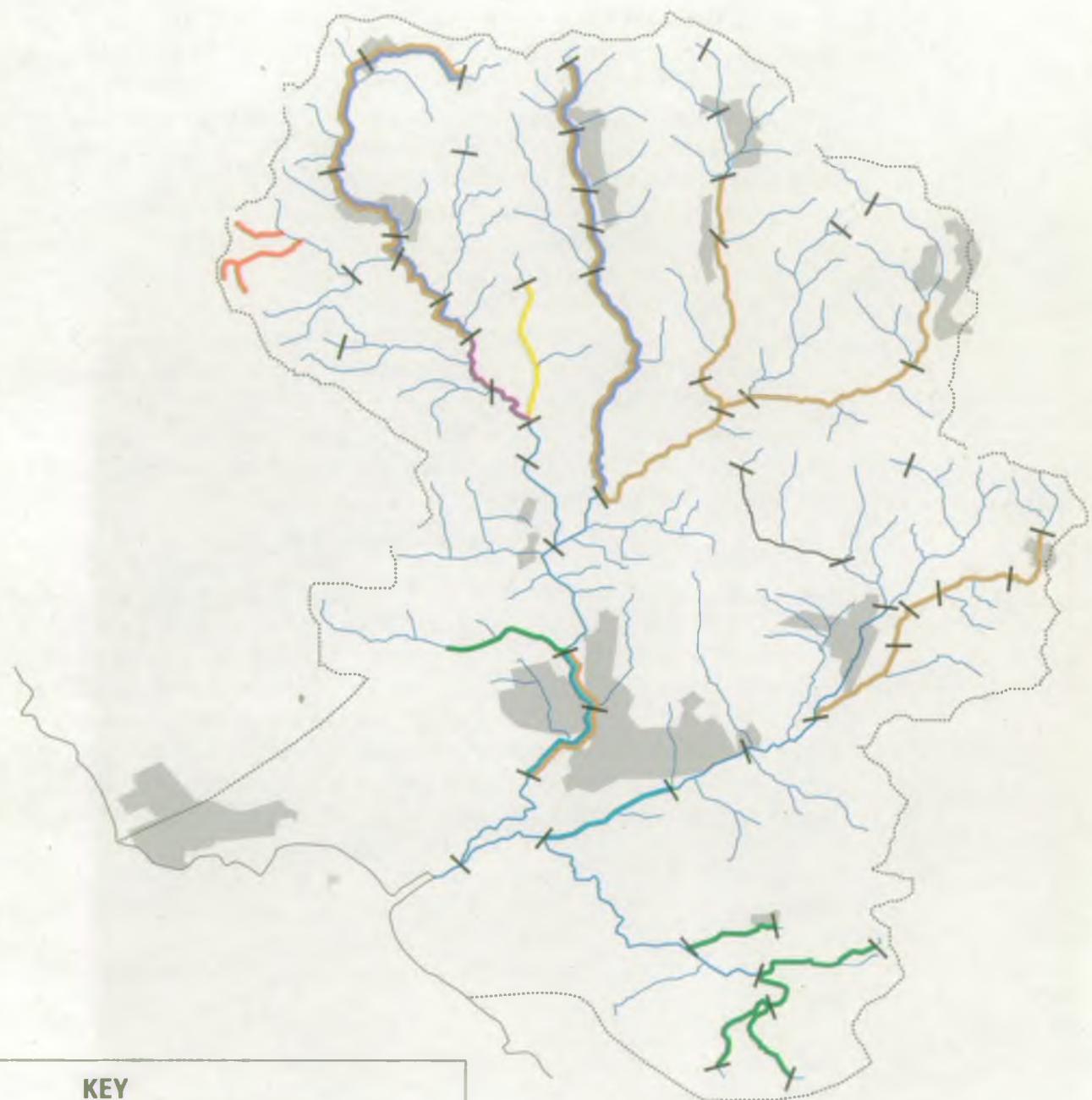
The Nant Crymlyn has poorer biological quality than expected from consideration of chemical quality. The cause of this is currently unknown.

Issue 10

There are numerous abandoned mines throughout the catchment and some of these discharge ferruginous (iron rich) waters. At present the

CAUSES OF WATER QUALITY TARGET FAILURES

MAP 24.



KEY

- CATCHMENT BOUNDARY
- AGRICULTURAL ACTIVITY
- LAND RECLAMATION
- SEWAGE EFFLUENT
- SEWERAGE SYSTEM
- ACIDIFICATION
- ABANDONED MINEWATERS
- INDUSTRIAL / URBAN RUN-OFF
- UNKNOWN

0 5 km



THE STATE OF THE CATCHMENT

deposition of iron on the beds of these watercourses has only localised effects. The exception to this occurs on the Nant Cedfyw, which has impoverished biological quality as a consequence of such a discharge. This discharge has been identified as a priority site for action in a Regional survey of minewaters funded by the Welsh Office and ourselves. A treatment option has been proposed by consultant mining engineers but to date no funding for this work has been secured.

Issue 11

Bridgend Industrial Estate is the source of:

- (i) Diffuse contamination of the Ewenny by discharges from premises on the estate. This is causing the failure of the General Ecosystem standard due to the levels of solvents present. A campaign of inspections is currently underway with the aim of tracing this contamination and ensuring that industrial premises on the estate take the necessary pollution prevention measures required to remove this problem.
- (ii) High numbers of pollution incidents, particularly involving oil spillages. These regularly require us to provide emergency responses to trace the source of contamination and minimise the environmental impact.

Issue 12

A number of pollution complaints are received relating to CSO discharges to the Ogmore and tributaries, and in particular the presence of sewage solids and debris at times of low dilution. Areas of particular concern include the Ogwr Fach downstream of Gilfach Goch, Blackmill, and the Ogwr Fawr, Llynfi and Garw valleys. We have identified the whole catchment as a priority for investment in improved sewerage infrastructure and schemes to improve the Ogmore and Llynfi Valley sewerage systems are planned for the period 1995-2000. Until these schemes are completed, we will ensure that DCWW provide effective responses to any problems that can be resolved by maintenance works.

THE STATE OF THE CATCHMENT

Issue 13

Groundwater quality at Schwyll, the major potable abstraction in the catchment, is threatened by pollution incidents and contamination which may enter the groundwater from the river systems. DCWW may mothball the works within the next two years, in which case drinking water for the area will be pumped from Felindre, near Swansea. Work is ongoing to identify and abate pollution from point sources such as industrial estates. Diffuse pollution from sludge spreading activities is also being targeted to ensure the risk of contamination is as low as possible. Irrespective of whether the Schwyll source continues to be used, we will need to protect the groundwater resource.

Issue 14

Litter from a variety of sources has a visual impact throughout both the Llynfi and Ogmore river systems, degrading the aesthetic value of the whole catchment. The Keep Wales Tidy Campaign, with financial support from ourselves, Local Authorities, the WDA and Industry, are undertaking assessments of the scale of the problem in the catchment and identifying blackspots. Certain high profile problem areas, particularly on the Llynfi, will be cleaned by contract labour. Further work to encourage local groups to take an interest in the river and adopt stretches will continue. This work and the improvements to the sewerage systems arising from the DCWW investment programme should assist in improving this situation.

Issue 15

A regional survey looking at the bioaccumulation of polychlorinated biphenyls (PCB's) and DDT has identified slightly elevated levels of these compounds in eels living in the Llynfi at Aberkenfig.

4.2

WATER QUANTITY

General

A catchment would fail its targets for water resources if abstraction was causing rivers and streams to dry up or flows to become unacceptably low, or if groundwater levels were declining.

Licences of Right had to be granted in 1965 without regard to the ability of the resource to sustain the abstraction in the long term without detriment. Over the years, the actual rates of abstraction have, in some cases, increased to the volumes specified in the licences. As this occurs, the potential arises for low flows or declining groundwater levels.

We have considered carefully the available surface and groundwater resources within the catchment and their degree of utilisation. The following Section and Map summarise the results of this analysis. It must be stressed that where no problems or areas for further investigation have been identified, we are satisfied that resources are adequate. As more information becomes available, for example about the actual flow requirements of the aquatic ecosystem, we will review our management of resources in each catchment.

Assessment of the catchment assumes that existing licence conditions are complied with. The NRA has a policy of active inspection and enforcement of licence conditions.

No allowance has been made for climatic change because future scenarios are uncertain and within the lifespan of this Plan (5 years) any change is unlikely to be significant.

Local Perspective

Increases in potable water supply requirements are being met primarily from outside the catchment and the number of small sources in use within the catchment is declining. The catchment is adequately served by rain, river and groundwater monitoring stations.

STATE OF THE CATCHMENT - WATER QUANTITY

MAP 25.



KEY

CATCHMENT BOUNDARY

● JAMONT PAPER MILL - ISSUE 16

— EWENNY FLOW REGIME - ISSUE 17

0 5 km



Issues Identified

Issue 16

The catchment fails to achieve its water quantity targets at the abstraction to Jamont Paper Mill on the Llynfi. This problem is of major significance as the authorised licensed quantity is approximately equal to the natural Q95 flow, and even though the discharge from the sewage works at Lletty Brongu supplements the flow, the river would be liable to dry up over the short distance between abstraction and discharge points during periods of dry weather.

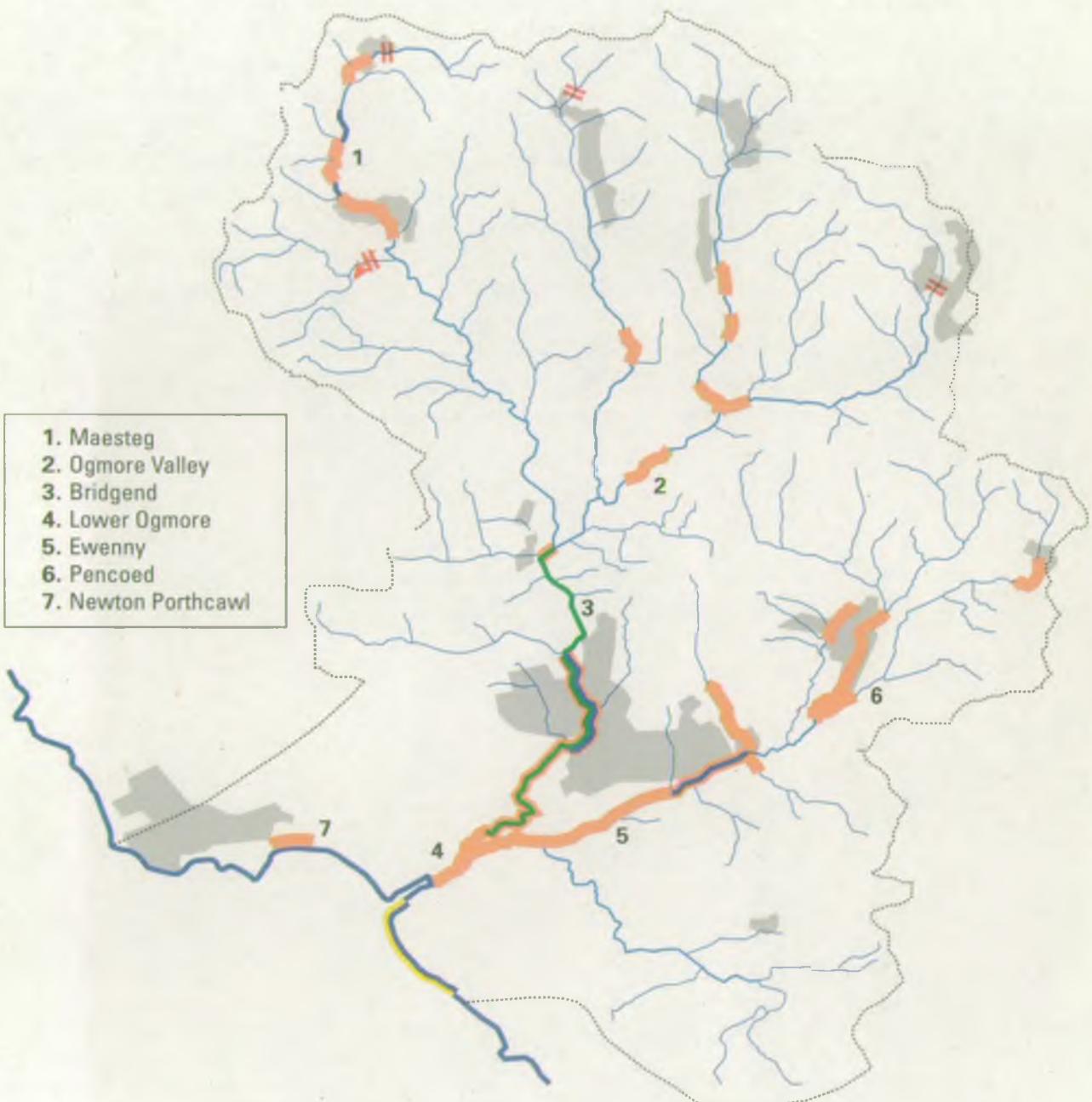
During an average year the Llynfi just downstream of the abstraction is likely to have a flow lower than the natural Q95 for about 90 days.

Issue 17

The flow regime of the Ewenny has altered. High river levels have been more frequent in recent years than during the earlier period of record. The contributory factors need to be investigated.

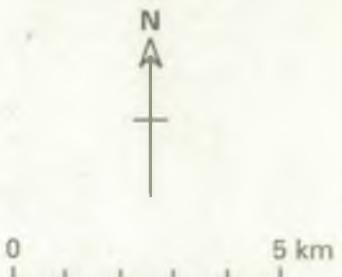
STATE OF THE CATCHMENT - PHYSICAL FEATURES

MAP 26.



KEY

- CATCHMENT BOUNDARY
- LOW FISH POPULATIONS
- ANGLER LITTER PROBLEMS
- AREAS AT RISK FROM MAIN RIVER FLOODING
- IMPROVEMENTS IN GENERAL ECOSYSTEM HABITAT REQUIRED
- MAN-MADE BARRIER TO MIGRATORY FISH
- ↗ FISH PASS



4.3 PHYSICAL FEATURES

General Flood risk has been assessed by studying the flood history over the past 25 years and the known distribution of flooding.

Many of the environmental targets for Physical Features are necessarily subjective and it therefore follows that their assessment often cannot be precise. Data from many sources including routine fisheries, biological and habitat surveys and special investigations are used to identify areas that are apparently deficient in certain essential or desirable features such as spawning gravels, riparian tree cover or in-river habitats.

The following section and map illustrate the current state of the catchment and identify areas where there are felt to be deficiencies.

Issues Identified

Issue 18 Despite the large programme of flood alleviation work already undertaken, there is a minor risk to property from flooding at the following locations:

- Ewenny Fawr at Pencoed.
- Confluence of the Ogwr Fach and the Ogwr Fawr at Blackmill.
- Llynfi at Nantyffyllon.

Issue 19 The removal of gravel shoals from the river channel, particularly in the urban areas, is necessary in order to maintain channel capacity and existing flood protection standards. The cost of removing and disposing of gravel shoals has increased in recent years and this may threaten the viability of the operation.

Issue 20 Fallen trees pose a risk to flooding and therefore require management to prevent loss from banksides.

Issue 21 The Government has indicated that our main input to development plan preparation regarding flooding issues should be via surveys undertaken under Section 105(2) of the Water Resources Act 1991. These surveys will identify the extent of land liable to flood and will highlight any likely flood defence problems. Surveys for this catchment will be undertaken by 1998.

Issue 22 Flood warnings currently issued for the Ogmore catchment are based upon river levels recorded at a number of gauging stations within the catchment. The current level of service for flood warnings for the

Ogmore catchment is thought to be below the target standard of service.

Issue 23

Routine maintenance works are carried out in order to maintain channel capacity for flood defence purposes. The impact of these works on the riverine environment needs to be assessed and reduced if possible.

Issue 24

Barriers to upstream migration by salmonids are present on the Llynfi at Caerau and on the Garw at Blaengarw.

Issue 25

Habitat improvements are required for the general ecosystem, for fisheries, and to facilitate the recovery of the otter population within the catchment. In particular, improvements are required at the following locations:

- the Ogmore in the vicinity of the Bridgend Phase 1 and Phase 2 Flood Alleviation Schemes.
- the Ewenny at the "canalised" section near the Waterton Industrial Estate.
- areas identified throughout the catchment by River Corridor Surveys.
- areas identified by otter surveys

Issue 26

Habitats vulnerable to degradation from opencast developments and land reclamation schemes should be protected and/or re-instated, including:

- Upper Garw Valley (Garw & Nant Hir)
- Gilfach Goch (Ogwr Fach)

Issue 27

Japanese Knotweed, an invasive plant species, is common throughout the catchment, and poses a threat to the native habitat and hinders access to the river bank. Another invasive plant, Himalayan Balsam, is also present in the catchment.

THE STATE OF THE CATCHMENT

- Issue 28** Riverside access could be improved by development of further links in the riverside footpath network at the following locations:-
- the Llynfi at Maesteg and Caerau.
 - the Garw along the Garw Valley.
 - the Ogwr Fawr at Ogmore Vale.
 - the Ogmore from Bridgend to Brynmenyn.
- Issue 29** Fish population densities in the Ogmore downstream of the confluence with the Llynfi are lower than expected for a catchment in such a geographical situation. Low fish populations have also been recorded in the Garw catchment.
- Issue 30** Poaching and illegal fishing have been common in the catchment, particularly when low flow conditions coincide with the presence of large numbers of fish in the river.
- Issue 31** Access to the Ogmore is limited for canoeing purposes, and there is a need to improve access arrangements where public rights of navigation do not exist.
- Issue 32** Litter deposited by sea anglers detracts from the appeal of popular tourist spots and is also a danger to wildlife.
- Issue 33** We have yet to agree formally with the Countryside Council for Wales a "Standard of Service" for Sites of Special Scientific Interest (SSSIs).

4.4

CONFLICTS BETWEEN USES

- General** Certain conflicts may arise between different catchment uses, irrespective of the catchment's ability to support these uses in terms of Water Quality, Water Quantity or Physical Features. For example, demands placed on the catchment by recreational uses often come into conflict with the need to conserve the wider environment. This section identifies conflicts between uses which are present within the Ogmore catchment.
- Local Perspective** Set out below is an area of conflict identified within the catchment. It is suggested that a change in mode of operation by the use/interest listed last in the margin (in bold) should be considered.

Conflict Identified

- Flood Defence/ plains, Development** Extensive development within the catchment, particularly within flood can impact on flood defence standards by increasing runoff, reducing/ restricting channel capacity, interfering with access along the watercourse for maintenance purposes, reducing the opportunities to construct new flood defences, and putting the development itself at risk. Any development which takes place should only proceed on the basis that it does not adversely affect flood defence operations (**Issue 34**).

APPENDICES

APPENDIX 1**THE GROUNDWATER PROTECTION POLICY**

The preservation of groundwater quality and quantity is a major objective of the NRA. Limiting the risk from pollution and over abstraction must be dealt with in a structured methodical manner.

The NRA has therefore produced a "Policy and Practice for the Protection of Groundwater" which provides advice on the management and protection of groundwater on a sustainable basis. The Welsh Region is implementing this national framework policy for the protection of groundwater which will effectively manage groundwater protection in the Ogmore Catchment. This new policy deals with the concept of vulnerability and risk to groundwater from a range of human activities. It considers both source and resource protection, together with policy objectives of the NRA with respect to the threat to groundwater from abstraction, physical disturbance of groundwater flows, waste disposal, contaminated land, discharges to underground strata, disposal of sludges to land and diffuse pollution.

The implementation of the policy relies in part on the construction of a series of protection zone maps. Resource protection maps will be produced after consideration of vulnerability of groundwater based on the nature of the strata and type of soil and drift.

The Policy recognises three groundwater source protection zones:

Zone I (Inner Source Protection)

Immediately adjacent to the source area defined by a 50-day travel time from any point below the water table to the source (based on biological contaminant decay).

Zone II (Outer Source Protection)

Area defined by 400-day travel time (based on the delay and attenuation of slowly degrading pollutants).

Zone III (Source Catchment)

The complete catchment area of a groundwater source. The controls to be exerted on a given activity will be more stringent the more vulnerable the resource and the nearer the source.

APPENDIX 2**THE REQUIREMENT FOR AN ABSTRACTION LICENCE**

	0 - 5 m³	5 - 20 m³	Above 20 m³
One off, any purpose	No restriction	Consent	Licence
	0 - 5 m³/d	5 - 20 m³/d	Above 20 m³/d
Domestic, to one household	No restriction in most cases		Licence
Agriculture (from surface water)	No restriction for land adjoining watercourse		Licence
Agriculture (from groundwater)	Licence	Licence	Licence
All other purposes	Licence	Licence	Licence

APPENDIX 3

GLOSSARY OF TERMS, UNITS AND ABBREVIATIONS

ABSTRACTION

When someone takes water, either permanently or temporarily, from a source (river, stream, spring, pond, lake or groundwater) they are 'abstracting' the water and they are making an 'abstraction'.

ABSTRACTION LICENCE

Authorisation granted by the NRA to allow the abstraction of water from a source of supply.

ACUTE

Used to describe a sudden dramatic effect, e.g a major pollution or overnight change in river course. Often used in conjunction with 'chronic' which describes longer term lower level impacts.

ADIT

An almost horizontal shaft into a mine, for access or drainage.

AFFORESTATION

The process of creating a forest where none existed before.

ALGAE

Simple plants which may be floating or attached. They can be microscopic or very large plants but they lack true stems. Like all plants, they are capable of photosynthesis. Algae occur in still and flowing water and are often discussed in the context of Eutrophication (see below).

ALLUVIAL DEPOSITS

Layers of sediment resulting from the activity of rivers. Usually fine material eroded, carried, and eventually deposited by rivers in flatter areas such as flood plains or lake beds.

AMELIORATE

To cause something to get better.

AMMONIA

A chemical which is often found in water as the result of the discharge of sewage effluents. It is one of the chemicals measured to characterise water quality. High levels of ammonia adversely affect the quality and use of water for fisheries and abstractions for potable water supply.

GLOSSARY

AOD (ABOVE ORDNANCE DATUM)

Land levels are measured relative to the average sea level at Newlyn in Cornwall. This average level is referred to as 'Ordnance Datum'. Contours on Ordnance Survey maps of the UK show heights above Ordnance Datum.

AQUATIC ENVIRONMENT

The rivers, streams, lakes, ponds, springs and features that depend on natural waters such as bogs, wetlands etc.

AQUIFER (MINOR AQUIFER)

A sub-surface zone or formation of rock which contain exploitable resources of groundwater. Minor aquifers seldom produce large quantities of water but are important for local water supplies and in supplying based flow for rivers.

BASE - FLOW

That part of the river flow that is derived from groundwater sources rather than surface run-off.

BIOACCUMULATION

The accumulation, by living organisms, of materials to concentrations higher than those of the surrounding environment. This is particularly important where poisons are accumulated.

BOD

An abbreviation for Biochemical Oxygen Demand. This is an estimate of the rate at which biological and chemical processes use up the oxygen available in water. It is one of the features that are used to classify water quality

BUFFER ZONE

A strip of land, usually 10-100m wide, at the side of a river which is isolated from the general surrounding land-use and allowed to develop naturally. This provides a number of benefits as well as providing valuable wildlife habitat. These include reduced inputs of silt and some pollutants and protection of river banks from erosion by livestock while allowing the river to respond naturally without undue threat to life or property.

CATCHMENT

The area of land draining to a defined point.

CHRONIC

Used to describe an effect, usually pollution or physical damage, that has gone on for a long time or takes a long time before an impact is seen. Often used in contrast to 'acute' which describes sudden dramatic effects.

CLASSIFICATION/CLASSES

A way of placing waters in categories (classes) according to assessments of water quality based, for example, on measurements of the amount of particular chemicals in the water (especially BOD, dissolved oxygen and ammonia).

GLOSSARY

COARSE FISH

Freshwater fish other than salmon and trout, many belonging to the carp family (Cyprinids).

CONFLUENCE

The point where two or more streams or rivers meet.

CONSENT

Two types of consent are issued by the NRA:

Discharge Consents are statutory documents issued by the NRA to indicate any limits and conditions on the discharge of an effluent to a controlled water.

Land Drainage Consents authorise works to the beds and banks of a river.

CONTROLLED WATERS

All rivers, lakes, groundwaters, estuaries and costal waters to three nautical miles from the shore.

CULVERT

Artificial channel, pipe or conduit that carries water under a road, canal etc.

CUMECS

Short for cubic metres per second (m^3/s). There are 86,400 seconds in a day. This is used to measure river flows.

DANGEROUS SUBSTANCES

Substances defined by the European Commission as in need of special control. This is because they are toxic, accumulate and concentrate in plants and animals, or do not easily break down into less dangerous substances. They are classified as List I or List II.

DEROGATION (Water Quality)

Derogation (i.e. waiving the result) may be applied where water quality fails a target due to natural or man-made conditions that are not readily controllable (e.g. low pH and/or elevated metal concentrations). This approach prevents unnecessary downgrading of waters and also carries the benefit that other, more controllable, aspects of water quality can be protected by the NRA at the target level.

DEROGATION (Water quantity)

A legal term that describes a diminution of the water rights of existing water users due to a new abstraction.

DIFFUSE

Spread out, not associated with a single place or point.

GLOSSARY

DISSOLVED OXYGEN

The amount of oxygen dissolved in water. Oxygen is vital for life, so this measurement is an important, but highly variable, test of the 'health' of a water. It is one of the features that are used to classify water quality.

ECOSYSTEMS

A group of animals and plants which live together within a certain type of surrounding or habitat (e.g. woodland, pond).

EC DIRECTIVE (Control)

A type of legislation issued by the European Community which is binding on Member States and sets standards and results to be achieved.

ENVIRONMENTALLY SENSITIVE AREA (ESA)

An area where the landscape, wildlife and historic interest are of national importance. Payments are made by Welsh Office to ensure appropriate sensitive land use.

EUTROPHIC/EUTROPHICATION

Terms which describe water which is rich in nutrients or the process of enrichment. At worst, such waters are sometimes beset with unsightly growths of algae which may pose a health risk to humans and livestock.

FAUNA

Animal life.

FLORA

Plant life.

FLUVIAL

Associated with river processes such as flow and erosion.

FRESHET

A naturally or artificially generated increase in river flow after a period of dry weather, having the effect of enhancing water quality and the aquatic environment e.g. through improved levels of dissolved oxygen and flushing of accumulated debris and silt.

FRY

Fish which are less than 1 year old.

GAUGING STATION

A site where the flow of a river is measured. Sometimes a weir is used to assist the measurement.

GLOSSARY

GROUNDWATER

Water contained within pores, cracks and fissures in rocks.

HABITAT

The natural home of plants and animals. Different plants and animals have different needs, and so live in different habitats.

HEAD

A measure of the height between upstream water level and power generating equipment.

HEADRACE

A channel that carries water to a water wheel or turbine.

INDICATIVE FORESTRY STRATEGY

These are produced by some local authorities and show the areas of land that are suitable or unsuitable for afforestation. They are divided into 'preferred areas', 'potential areas' and 'sensitive areas'.

LEACHATE

This is the product of the removal of soluble substances by action of water percolating through soil, waste or rock. Often used in association with dumped waste materials.

LEAT

A channel which conveys water to a mill wheel.

LIST I AND LIST II SUBSTANCES

European Community Directive 76/464/EEC aims to reduce pollution in controlled waters by certain dangerous substances. These consist of chemicals selected mainly on the basis of their toxicity, persistence and bioaccumulation. These substances are divided into 2 categories:

- List I substances are considered to be the most harmful. Pollution caused by these must be eliminated.
- List II substances are less harmful and pollution caused by these must be reduced.

m³/d

Short for cubic metres per day. There are 1000 litres in a cubic metre, and 1000 cubic metres in a megalitre (Ml). In Imperial Units, there are 220 gallons in a cubic metre. This unit is often used to measure abstraction of water.

m³/s

Short for cubic metres per second (cumecs). There are 86,400 seconds in a day. This is used to measure river flows.

GLOSSARY

MACROINVERTEBRATE FAUNA

Small aquatic animals, such as insects, snails and worms which live in the river bed.

ML/a and ML/d

Short for megalitres per annum or per day, both standard international units of measurement. There are a thousand cubic metres in a megalitre and one million litres in a megalitre. In Imperial Units, one megalitre is about 220,000 gallons. These units are often used to measure abstraction of water.

mm

Short for millimetres. There are 1000mm in a metre. This unit is used to measure rainfall.

NITRATE SENSITIVE AREAS (NSA) AND NITRATE VULNERABLE ZONES (NVZ)

Land in areas where water sources exceed or will exceed 50mg/l of nitrate by 2010 are designated as NVZs. Farmers are required to follow regulations designed to reduce nitrate loss from their land in both NVZs and NSAs although they only receive compensation for doing so in NSAs.

PARAMETER

A general name for a characteristic or aspect of water quality. It is often a feature which can be described numerically.

PARCOM

A monitoring programme for pollutants selected by the Paris Commission, carried out by the NRA in England and Wales.

PARR

Salmon which are 1 or more year old which have not yet gone to sea.

PERMEABILITY

The ease with which liquids (or gases) pass through materials, (often rocks or soils).

PERMISSIVE POWER

The NRA is given various powers to do things by a number of Acts of Parliament. Some of these powers are 'permissive', which means the NRA can do these things, but is not under a duty to do them. For example, NRA has permissive powers to construct flood defences, but does not have a duty to do this. In contrast, the NRA has certain statutory duties, i.e. things it must do, e.g. it must authorise abstractions, discharges and works to the bed or banks or main rivers.

POOL

A distinct, deeper area of slow flowing water, often with an eddying flow and often found between fast flowing stretches which are known as 'rifles'.

GLOSSARY

POROSITY

The volume of water that can be held within rock or soil. This is determined by the total volume of the rock or soil divided by the spaces (voids) within it.

POTABLE

Water suitable for drinking.

REACH

A length of a river.

RED LIST SUBSTANCE

A substance that has been selected for monitoring due to its toxicity, persistence and bioaccumulation.

REDD

Salmon excavate a depression in river gravels into which they lay their eggs. The eggs are then covered with gravel. This 'nest' is known as a 'redd'.

RIFFLE

Fast flowing shallow water with a distinctly broken or disturbed surface. Riffles are often found between pools.

RIPARIAN

Associated with the river bank. A Riparian owner is the owner of the banks and land adjacent to the river and usually owns the river bed to the mid - point of the wetted channel.

RIVER CORRIDOR

A term which describes a stretch of river, its banks, and a varying amount of adjacent land that is affected by the presence of the river.

RIVERINE

Something that is associated with the river environment.

RIVER QUALITY OBJECTIVE (RQO)

The quality of water that the river should attain in order to support its agreed uses. An RQO may be bound to a certain date for achievement or to a future, indefinite, time. The latter is described as a Long Term RQO (LTRQO).

SALMONID FISH

Game fish, e.g. trout and salmon.

SETASIDE

The Common Agricultural Policy reform provides for land to be removed (set aside) from food production to reduce surpluses. The land can be set aside temporarily or permanently and can be a valuable opportunity for wildlife habitat improvement or the provision of riparian buffer zones.

SMOLT

At a particular stage of their development, young salmon and sea trout migrate to the sea, and at this stage are known as smolts.

SPATE (flash flood)

A sudden increase in river flows that may cause flooding or other damage. Typically the flows will fall as quickly as they rose once rainfall ceases. A spate, or flashy river is one that is characterised by such sudden and wide variations in flow as a result of rainfall.

SPRING RUN

Salmon return from the sea to freshwater rivers when adults. They migrate up the rivers to spawn, and this upstream migration is known as the 'run'. There are two main periods of the year when the runs occur; spring and autumn. The spring run fish are often larger than later-run fish, and are often more prized by anglers.

SSSI

Abbreviation for 'Site of Special Scientific Interest'.

STATUTORY MAIN RIVER

A legal definition which defines particular rivers and streams on special maps. On the 'Main River', the NRA has permissive powers to construct and maintain defences and to control the actions of others through Byelaws and the issue of Consents. Any proposal that could interfere with the bed or banks or affect the flow of the river requires formal consent from the NRA.

SURFACE WATERS

This is a general term used to describe all the water features such as rivers, streams, springs, ponds and lakes.

TELEMETRY

Telemetry is a means of collecting information that has been collected by unmanned monitoring stations (often for river flows or rainfall) using a computer that is connected via the public telephone system.

TIME LIMITED LICENCE

Every licence states whether it is to remain in force until revoked or is to expire on a specified date.

UNCLASSIFIED REACHES

Stretches of river (usually smaller streams) that do not fall under the General Quality Assessment classification scheme and therefore do not have their water quality monitored routinely.

GLOSSARY

WASHLANDS

Extensive areas of semi-natural flood plain next to a river, where water is stored during floods. The amount of water stored may be altered by man made devices such as weirs and sluices. Washland storage has the effect of reducing the flood peak downstream and may help to protect developed areas from flooding and also provide valuable wildlife habitats.

WEIR

A low dam built across a river to raise the water level, divert the water or control its flow.

WETLAND

Wet areas where the animals and plants that live there are dependent on that 'wetness' for their survival. They include bogs, reed-swamps and mires but not the river corridor.

95-PERCENTILE FLOW (Q95)

The flow which one would expect to be exceeded 95% of the time on average. This is an estimate of the dry weather flow which the river would be at, or below, for 18 days per year on average.