

RIVER ITCHEN CATCHMENT MANAGEMENT CONSULTATION REPORT SUMMARY



NRA

National Rivers Authority

Southern Region

**Guardians of the
Water Environment**





INTRODUCTION

The National Rivers Authority (NRA) has been established as the "Guardian of the Water Environment", a government agency responsible for

- Conserving and managing water resources
- Pollution control in rivers and coastal waters
- Flood defence and the provision of flood warnings
- Protecting and developing freshwater fisheries
- Promoting water related conservation
- Promoting water based recreation



NRA Regions are defined in terms of river basins, most of the Authority's functions are managed within a catchment framework and the need to resolve the conflicts inherent in their differing objectives makes it essential to integrate the NRA's planning in the same way. The NRA recognises that the water environment is affected by all the activities taking place in a catchment, not all of which are under its direct control. Cooperation is essential if the Authority is to be effective.

Catchment Management Plans offer an opportunity for the public to contribute to NRA thinking and for the Authority to integrate its forward work programme with those of other interests. They concentrate on topics where the NRA has a particular responsibility and are focused mainly on the river corridor. Whilst they lack the status of statutory planning documents it is hoped that Catchment Plans will make a positive input to the Town and Country planning process.

National Rivers Authority
Information Centre
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Class No

Accession No ANE 52/1

ENVIRONMENT AGENCY



099851

YOUR VIEWS

This report is the first stage of the planning process for the River Itchen, we want to hear your views.

- Have we identified all the issues?
- Have we identified all the practicable solutions?
- Have you any comment on the issues and options listed?

To obtain a copy of the full Consultation Report, or to comment on this summary document, please write to

The Catchment Planning Coordinator
NRA Southern Region
Guildbourne House
Chatsworth Rd.
WORTHING
BN11 1LD

Comments are best made in writing and should be received by the NRA by Friday 2nd April 1993

THE ITCHEN CATCHMENT

The River Itchen rises on the Hampshire Downs as three spring fed tributaries; the Candover Stream, the River Alre and the Cheriton Stream, which join to form the River Itchen just west of New Alresford. From here the river flows westwards to Winchester where it turns south, flowing through the outskirts of Eastleigh and Southampton to the tidal limit at Woodmill. The population of the catchment is approximately 250,000, concentrated in Southampton, Eastleigh and Winchester. North of



*Winchester
bridge and mill*

Eastleigh the catchment is predominantly rural, with water cress and fish farming important industries in the upper valley.

For much of its length the River Itchen runs in multiple braided streams which are the legacy of historic mills and water meadows. The valley is important for wildlife and is one of the few remaining havens for otters in south east England. Downstream of Winchester the remnants of the Itchen Navigation channel still form part of the river system, although the right of navigation has lapsed. The last working mill ceased operation in the 1960s.

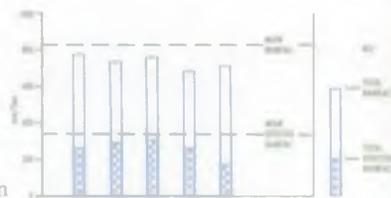
The Itchen is famous as a chalk stream, owing its character to the springs which provide the bulk of its flow. The upper catchment has few tributaries and most of the rainfall soaks directly into the chalk so that storms have little immediate effect on the river. From Eastleigh to the sea the Itchen flows over sands, silts and clays which are less permeable than the chalk, making flows in this part of the river more responsive to rainfall.

The chalk aquifer provides the River Itchen with a stable flow of cool, clear, hard alkaline water which creates ideal conditions for the high quality fisheries for which the river is famous. Trout are found throughout the catchment and there is a salmon run into the lower reaches, fished by rod anglers and a commercial net at Woodmill.

The high quality groundwater of the Itchen catchment provides drinking water for much of central southern Hampshire; direct abstractions from the river also supply the Fareham/Gosport area.

RAINFALL AND RIVER FLOW

Rainfall and groundwater levels are monitored throughout the catchment and flow is measured at a number of points along the main river. In an average year the rainfall across the catchment is fairly even, varying between 800mm at the coast and 1000mm on the downs, but between November 1989 and January 1992 total rainfall was some 10% below average. After evaporation and when the demands of growing plants had been met there was only three quarters of the normal quantity to recharge aquifers and fill the river, resulting in a drought such as might be expected once in fifty years. River flows between May 1989 and January 1992 approached the lowest recorded in 31 years, and for much of this period groundwater levels were below average with all-time minimum levels recorded on four separate occasions.



Rainfall Record from Otterbourne Station
Actual Evaporation Data from MORECS Database

PUBLIC WATER SUPPLY

The Itchen catchment is an important source of drinking water which is taken from boreholes, such as those which serve Winchester, and direct from the river. Major abstractions at Otterbourne supply Eastleigh and parts of Southampton, reducing downstream river flows significantly in the summer months. Further supplies are taken from the river at Gaters Mill, adjacent to the M27 crossing, to serve consumers in the Fareham/Gosport area.



*Otterbourne
water intake*

Each of these two river abstractions is licensed to take 45 Ml/d (10 million gallons per day (MGD)). Having preceded the 1963 Water Resources Act they are not subject to the limiting conditions which control newer abstractions to protect the environment at times of low river flow; indeed, for historic reasons the earlier licences (Licences of Right) may specify abstraction volumes greater than can be supported at all times by the resource they draw on. It follows that additional water supplies are not necessarily available from existing sources even though the volume of water abstracted from the Itchen catchment in an average year is only 70% of the licensed total.

WATER SUPPLY FOR INDUSTRY AND AGRICULTURE

Three quarters of the abstractions licensed in this category are for small supplies to agriculture or isolated homes and total less than 5% of the licensed volume. In contrast, water cress growing accounts for 90% of the volume abstracted but nearly all this water is returned to the river after use, although there may be significant local reductions in river flow in some cases. Fish farms make similar demands on the river.

There are no significant industrial abstractions in the catchment.

USE OF THE WATER RESOURCE

Approximately half the water available from the Itchen catchment in an average year is allocated for licensed abstraction. Actual abstraction at such times is approximately half the licensed total and one third of the water taken is returned as treated effluent. Consumptive use (where abstracted water is lost from the catchment by evaporation or transfer to another river basin) is approximately 15% of the resource available in an average year, but represents 25% in a 1 in 10 year drought.



Gaters Mill fish pass

The NRA considers the long-term water resources of the Itchen catchment upstream of Gaters Mill to be fully committed, although there may be potential for new flow-limited seasonal abstractions. The expected rise in water demand of 20% by the year 2010 and could be met by a combination of demand management (eg by metering water supplies and controlling leaks) and by pumping water northwards from increased abstraction at the tidal limit. With safeguards to protect the passage of salmon and environmental interests in the estuary an additional 70 MI/d to 90 MI/d (up to 20 MGD) may be available from this source.

RIVER FLOW MANAGEMENT

At times when natural flows are low the River Itchen cannot support the demands of abstraction without compromising other river uses and risking water quality in the lower reaches. This problem is managed by pumping water into the river from the aquifer in the upper catchment, short-circuiting the natural groundwater system. The extra flow at these times benefits the whole river between Alresford and Swaythling and ensures that the demands for public water supply can be met. The original Candover augmentation scheme was installed in 1976, a further scheme with similar benefits has been developed in the Alre catchment.



Candover augmentation scheme

WATER QUALITY AND EFFLUENT DISPOSAL

Water quality in the River Itchen is classified as 'Good', Class 1A above Eastleigh and Class 1B from here to the estuary, standards which are met consistently.

With most of the population concentrated in coastal areas there are few sewage effluent discharges to the catchment. Treated effluent from Alresford, Winchester and smaller settlements on the chalk is discharged to soakaways, recycling the water and boosting the resource. By far the largest direct discharge to the river is from Eastleigh sewage works (STW) where 30 Ml/d (6.6 million gallons per day) is treated to a high standard. The capacity of the river to accept this load at times of low flow without adverse effects on water quality depends on the operation of groundwater augmentation schemes (see above).

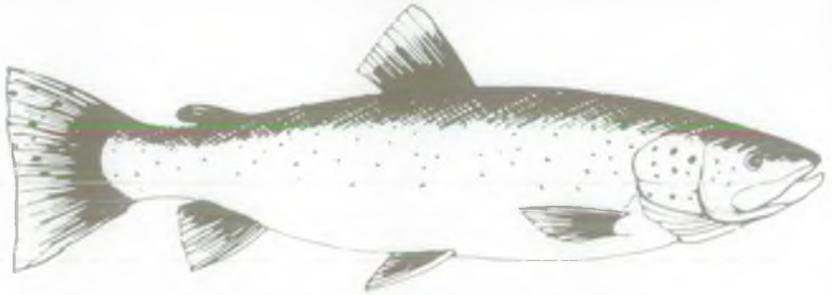
Other than fish farm and cress farm effluents there are no major industrial discharges in the catchment.

INTERMITTENT AND DIFFUSE POLLUTION

Intermittent pollution incidents in the Itchen catchment are predominantly centred around the urban areas of Winchester, Eastleigh and Southampton, with the Monks Brook being particularly vulnerable.

FISHERIES

The River Itchen is famed for its high quality trout fisheries which are largely maintained by stocking, but are managed above Winchester to favour the



native Brown Trout. Low river flows, changes in the relative abundance of water weeds and escapes of exotic Rainbow Trout from fish farms in the upper reaches have caused problems for trout fisheries in recent years.

Below Bishopstoke the river supports a salmon fishery, but declining runs of adult fish and poor spawning success in recent years have put this use at risk. The NRA is investigating the causes and collaborates with riparian interests to improve the situation by habitat improvement, restocking and the construction of fish passes.

Lake fisheries in the catchment are important for both trout and coarse fishing, there is also a limited river coarse fishery around Eastleigh and between Mansbridge and Swaythling.

THE CATCHMENT





-  RIVER ITCHEN
-  COAST LINE
-  RIVER ITCHEN TOPOGRAPHIC CATCHMENT
-  TOWNS
-  MOTORWAY



CONSERVATION

The high conservation value of the Itchen valley is reflected by the designation of much of the catchment as Areas of Outstanding Natural Beauty (AONB) and Sites of Special Scientific Interest (SSSI), including an extensive SSSI along the river corridor between Alresford and Twyford. Important habitats include old water meadows, unimproved grassland, fen, carr and wet woodland which provide shelter for a fragile otter population.



Cress farm

The retention of a green corridor adjacent to the river channel is important for the maintenance of its landscape and conservation interest and helps to buffer the river from the effects of agriculture and changed land use.

RECREATION AND AMENITY

The River Itchen is a high quality amenity with clear water and an attractive landscape setting, but may be affected from time to time by turbidity and the presence of floating vegetation following weed cutting. The estuary is an important centre for recreational boating, but there is no right of navigation on the inland river.

There is good public access to the river with footpaths alongside or close to the River Itchen, Candover Stream, Cheriton Stream and River Alre. Long distance footpaths such as the Pilgrims Way, Itchen Valley Walk, Clarendon Way and Wayfarers Walk run through the catchment.

ISSUES IDENTIFIED

1. Major abstractions between Otterbourne and Twyford are not subject to conditions to protect the environment when river flows are low and have a significant impact downstream of Otterbourne in the summer months.
2. There is a need to set a minimum residual flow for the outflow of the Itchen to its estuary, to control current and future abstractions from the lower reaches of the river.
3. An opportunity exists to develop an additional abstraction from the tidal limit, supported by the Candover and Alre river augmentation schemes, which may be as much as 70 Ml/d - 90 Ml/d (up to 20 MGD).
4. Suitably treated effluents are needed to maintain river flows and as a contribution to the water resources of the catchment. However, river water quality in the lower reaches would deteriorate at times of low flow without river augmentation to maintain dilution for sewage effluents.
5. To the north of Otterbourne, where the chalk is exposed at the surface, the aquifer is vulnerable to accidental pollution.
6. The salmon population of Hampshire rivers is in decline, with poor spawning success and low runs of adult fish.
7. Migrating adult salmon are impeded by weirs and sluices in the Bishopstoke area.
8. In high-level carriers leakage of water from damaged river banks, weirs and sluices reduces flow, encourages weed growth and siltation, and has an adverse effect on the amenity value of the river.
9. Shallow water, localised turbidity and lack of weed have caused problems to anglers in some recent years. Whilst the drought has been partly to blame, over-wide streams and changes in river management practices have also contributed to the problem.

TABLE OF MANAGEMENT OPTIONS

| ISSUE REF. No. 1 | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------|
| LOW FLOWS DOWNSTREAM OF OTTERBOURNE | | | |
| Management Options | Responsible Bodies | Pros | Cons |
| Review Otterbourne and Twyford abstraction licences with a view to linking them to prescribed flow conditions. | NRA; Southern Water Plc | Protects river flows | Cost; Reduced reliability of supply |
| Move the surface water abstraction to the tidal limit. | NRA; Southern Water Plc | Improved river flows | Cost |
| Operate the Candover augmentation scheme when required. | NRA | Improved river flows | Cost; Artificial flow regime |
| Commission and license the Alre augmentation scheme. | NRA | Improved river flows | Cost; Artificial flow regime |
| Continue the policy that effluents are treated locally and discharged to the river or groundwater to conserve the resources of the catchment | NRA; Southern Water Plc | Conserve water resource | Possible impact on water quality if river flow not maintained |
| ISSUE REF No 2 | | | |
| NO PRESCRIBED FLOW CONTROLLING GATERS MILL ABSTRACTION | | | |
| Management Option | Responsible Bodies | Pros | Cons |
| Review the Gaters Mill abstraction licence. | NRA; Portsmouth Water Company | Improved river management and protection of low river flows | Cost; possible reduced reliability of supply |
| ISSUE REF No. 3 | | | |
| DEVELOP NEW RESOURCE AT THE TIDAL LIMIT | | | |
| Management Options | Responsible Bodies | Pros | Cons |
| License new abstraction subject to prescribed flow. | NRA; Southern Water Services; Portsmouth Water Company | Increase resource; Improve resource management; Replace upstream abstraction | Possible need for new water treatment plant |
| Commission and license the Alre augmentation scheme. | NRA | Improve river flows | Cost; Artificial flow regime |

TABLE OF MANAGEMENT OPTIONS

| ISSUE REF. No 4 | | LACK OF DILUTION FOR EFFLUENTS IN LOWER REACHES | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Management Options | Responsible Bodies | Pros | Cons |
| Transfer of Otterbourne surface water abstraction to tidal limit. | NRA; Southern Water Services | Improved dilution | Cost; Replacement of treatment plant |
| Operate Candover augmentation scheme when required. | NRA | Improved dilution | Cost; Artificial flow regime |
| Commission and license the Alre augmentation scheme. | NRA | Improved dilution | Cost; Artificial flow regime |
| Improve the effluent standard for Eastleigh sewage treatment works. | NRA; Southern Water Services | Reduce pollutant input | High cost; Technical feasibility; Risk of causing the effluent to be discharged away from the river with consequent loss of resource |
| ISSUE REF. No 5 | | CHALK AQUIFER IS VULNERABLE TO POLLUTION | |
| Management Options | Responsible Bodies | Pros | Cons |
| Enforce the Aquifer Protection Policy and the National Groundwater Protection Policy when available. | NRA | Minimise risk of pollution | |
| Educate agriculture and industry to take proper care in the storage and handling of oils, fuels, chemicals, solvents and toxic substances. | NRA; Factory owners; Local Authorities; NFU; Inspectorate of Pollution; Water Companies; MAFF | Minimise risk of pollution | Cost of publicity, enforcement and inspection; Cost to industry and agriculture |
| Ensure that road drainage works incorporate measures to minimise pollution. | NRA; Department of Transport; Local Authorities | Minimise risk of pollution | Cost of additional works if necessary |
| Review the groundwater monitoring programme. | NRA | Prompt identification of problems and causes | Cost |

TABLE OF MANAGEMENT OPTIONS

| ISSUE REF. Nos. 6 & 7 | | DECLINING SALMON POPULATION | |
|------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Management Options | Responsible Bodies | Pros | Cons |
| Investigate dynamics of salmon population. | NRA (in hand) | | |
| Manage river gravels to improve spawning success. | NRA; Riparian owners; Test & Itchen Fishing Association | Reduce need for stocking; Maintain natural population | Cost; Access to river with suitable machinery |
| Support natural population by stocking with suitable young fish. | NRA; Angling interests; Test & Itchen Fishing Association | Immediate impact on problem | Cost; Availability of fish |
| Provide artificial in-stream incubators. | Ditto | Low cost solution | Availability of suitable adult fish; Risk of vandalism |
| Establish salmon hatchery in South-East England. | NRA | Maintain salmon population | Availability of suitable adult fish; Cost; Long-term need unless spawning habitat improved |
| Provide fish passes where necessary. | NRA; Riparian owners | Encourages natural spawning | Cost |
| ISSUE REF No. 8 | | LEAKAGE FROM DAMAGED BANKS AND CONTROL STRUCTURES | |
| Management Options | Responsible Bodies | Pros | Cons |
| Repair banks and structures. | NRA; Riparian owners | Improved conservation of river flow | Cost; Manpower requirement |
| Control burrowing animals. | Ditto | Ditto | Ditto |
| Ensure fair distribution of flow between carriers. | Ditto | Ditto | Ditto |

TABLE OF MANAGEMENT OPTIONS

| ISSUE REF No 9 | | LOCALISED TURBIDITY, SHALLOW WATER AND LACK OF WEED | |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|
| Management Options | Responsible Bodies | Pros | Cons |
| Infill over-deep sections. | Riparian owners; NRA; Test & Itchen Fishing Association | Improved mainstream flow | Cost |
| Close off flow to some of carrier channels. | Riparian owners; Test & Itchen Fishing Association | Improved flow velocity | Loss of fishing space; Potential effects on ecology of carriers |
| Reducing stream width where necessary, as has been carried out near Easton. | Riparian owners; Test & Itchen Fishing Association | Improved flow velocity | Cost; Potential loss of bankside habitat |
| Return to traditional river management practices (autumn weedcut, gravel raking, mudding etc.). | Riparian owners; Angling interests; Test & Itchen Fishing Association | Reduced siltation; Improved substrate and healthier aquatic weed | Manpower requirement; Cost |
| Refuse licences for consumptive abstraction from the chalk aquifer. | NRA | Conserve river flow | Reduced abstraction potential |
| Ensure that future water demand is supplied from the bottom of the catchment. | NRA; Water Companies | Conserve river flow | Cost |
| Ensure that effluents are treated locally and discharged to the river or groundwater to conserve the resources of the catchment. | NRA; Southern Water Services; Industry; NFU | Conserve river flow | Cost; Possible impact on water quality |

NRA MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS OF THE NRA

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution;
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it;
- to provide effective defence for people and property against flooding from rivers and the sea;
- to provide adequate arrangements for flood forecasting and warning;
- to maintain, improve and develop fisheries;
- to develop the amenity and recreation potential of waters and lands under NRA control;
- to conserve and enhance wildlife, landscape and archaeological features associated with water under NRA control;
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority;
- to ensure that dischargers pay the cost of the consequences of their discharges and, as far as possible, to recover the cost of water environment improvements from those who benefit;
- to improve public understanding of the water environment and the NRA's work;
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.

Swans on the river at Easton





ENVIRONMENT AGENCY

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