

EA-South West

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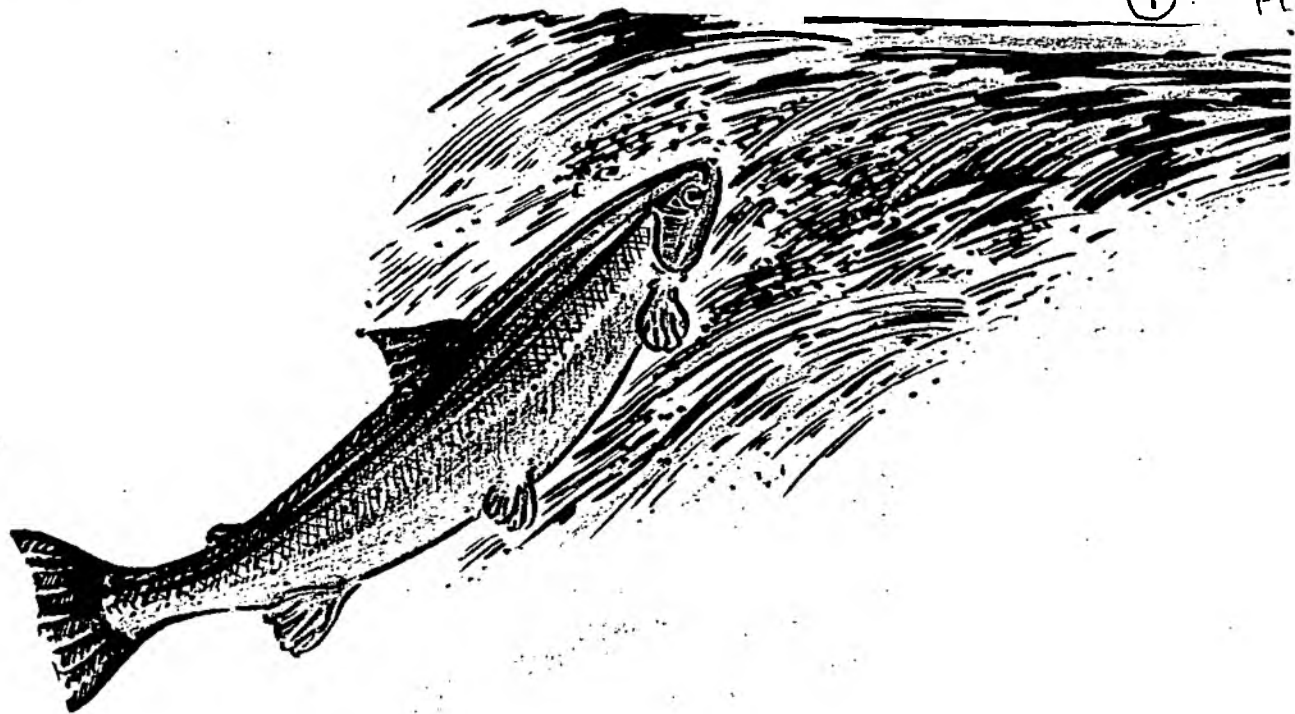
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SALMON Action Plan

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Hampshire Avon
September 1997



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1. INTRODUCTION

In 1996 the National Rivers Authority published *A Strategy for the Management of Salmon in England and Wales*. This national strategy identifies clear objectives allowing resources to be focused on priority activities. It provides consistent policies and a framework to manage stocks. The objectives for the future management of this resource are given as:

- 1 *optimise the number of salmon returning to home water fisheries;*
- 2 *maintain and improve the fitness and diversity of salmon stocks;*
- 3 *optimise the total economic value of surplus stocks;*
- 4 *meet the necessary costs of managing the resource.*

The Strategy document outlines how these could be achieved in practice, to ensure the sustainable exploitation of our salmon, so conserving this species for future generations.

The Agency is committed to implementing this Strategy by means of local Salmon Action Plans (SAP) drawn up by the year 2000 for all our principal salmon rivers, after consultation with local interest groups. The Action Plan Consultation Documents:

- set spawning targets and fishing effort controls for salmon stocks and fisheries;
- identify and establish the feasibility of removing factors limiting salmon survival and production;
- outline a programme of works to carry out necessary remedial, improvement and development measures.

The final SAP document (this document) provides a clear statement of actions to be undertaken to bring about desired benefits to salmon fisheries, with costs, after consideration of feedback from external consultation. A key purpose of the final SAP is to be the reference document for monitoring progress (it is not a revamped version of the original consultation SAP).

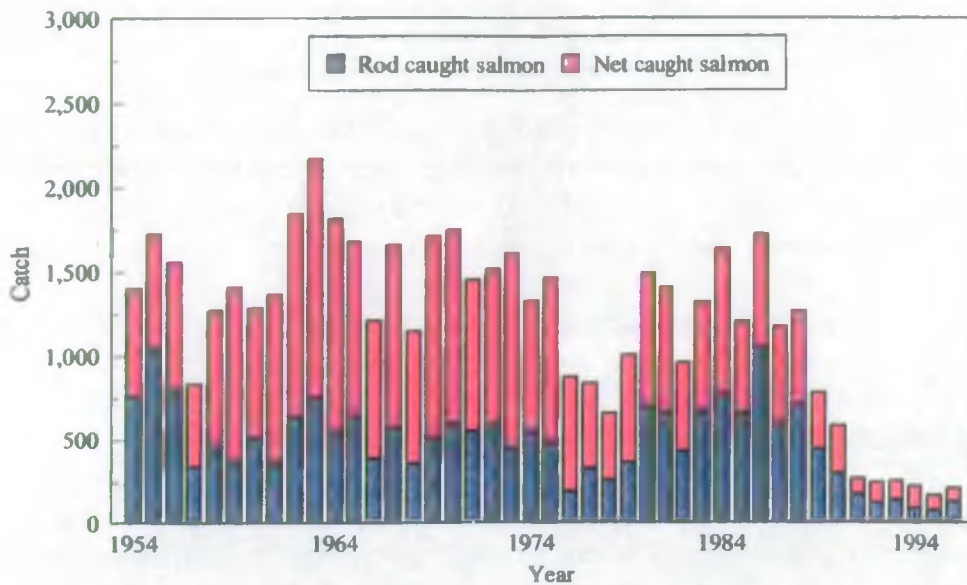
The Hampshire Avon Salmon Action Plan is the first drawn up by the South Wessex Area, South West Region.

2. HAMPSHIRE AVON SALMON ACTION PLAN

All chalk stream salmon stocks declined dramatically between 1988 and 1991 during a prolonged drought period which coincided with two years of exceptionally high mortality at sea.

Because the Avon appeared to be the worst affected, this river was chosen for the first Action Plan in South Wessex.





Salmon catches on the Hampshire Avon



The Hampshire Avon catchment - areas used by salmon

This Action Plan sets out the ways in which the Environment Agency, working with other interested parties, seeks to promote rapid recovery of wild-breeding Avon salmon stocks. The proposed actions are intended to facilitate a rise in stock levels to those which will sustain an optimum yield to rod and net fisheries for present and future generations of fishermen, bringing economic as well as ecological benefits.

The actions are also chosen to protect and maintain the special characteristics of the Avon salmon stock.

Much has already been done, as an enhanced programme of habitat improvements targeting spawning areas and migration hold-ups was set up in 1993. Additionally, working with the Wessex Salmon Association, the Agency has been able to build up

significant levels of catch-and-release in both rod and net fisheries.

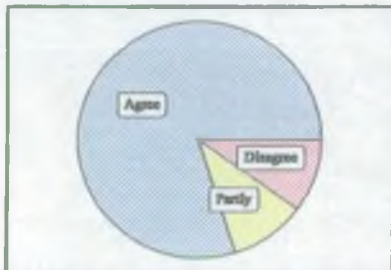
The Action Plan builds upon these achievements and sets out proposals for the next five years.

3. PUBLIC CONSULTATION

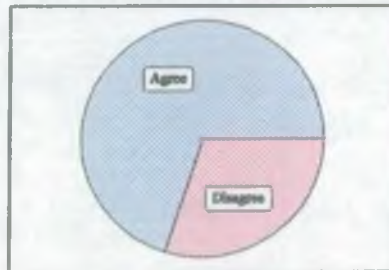
In our *Hampshire Avon Salmon Action Plan Consultation Document*, published in May 1997, we set out details of the Avon salmon stock and its environment, highlighting what we believed to be major constraints acting at present, and setting out ways of reducing these so as to promote stock growth to an objectively derived and practically useful minimum level to provide optimal yields on a sustainable basis.

We distributed 70 copies to organisations and individuals accompanied by a short questionnaire which sought consultees' views on the document. We received 17 formal responses and 10 questionnaires were returned.

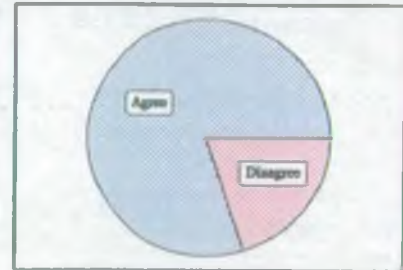
To the question whether consultees agreed with our view of the state of salmon stocks on the Avon, 80% agreed:



To the question whether consultees thought we had identified all the issues concerning the salmon stocks in the catchment, 70% agreed:



To the question whether consultees thought we were proposing the correct actions, 80% agreed:



There appeared therefore to be a reasonably high level of agreement amongst interested parties with our analysis of the problem and our suggestions for actions to enhance stocks.

- We also asked consultees for their views on which of the actions proposed should be given the highest priority.

Suggestions for alternative actions or for priority adjustments have all been carefully considered and evaluated and those with widespread support or with individual merit have been assimilated into the Action Plan (*see italicised sections*).

Some respondents picked up errors and shortcomings of communication within the Consultation Document and the implications of these for the Action Plan have been traced through and where necessary acted upon.

We would like to thank all those who have sent in these valued contributions.

4. MANAGEMENT OF THE PLAN

The salmon action planning process operates at three levels.

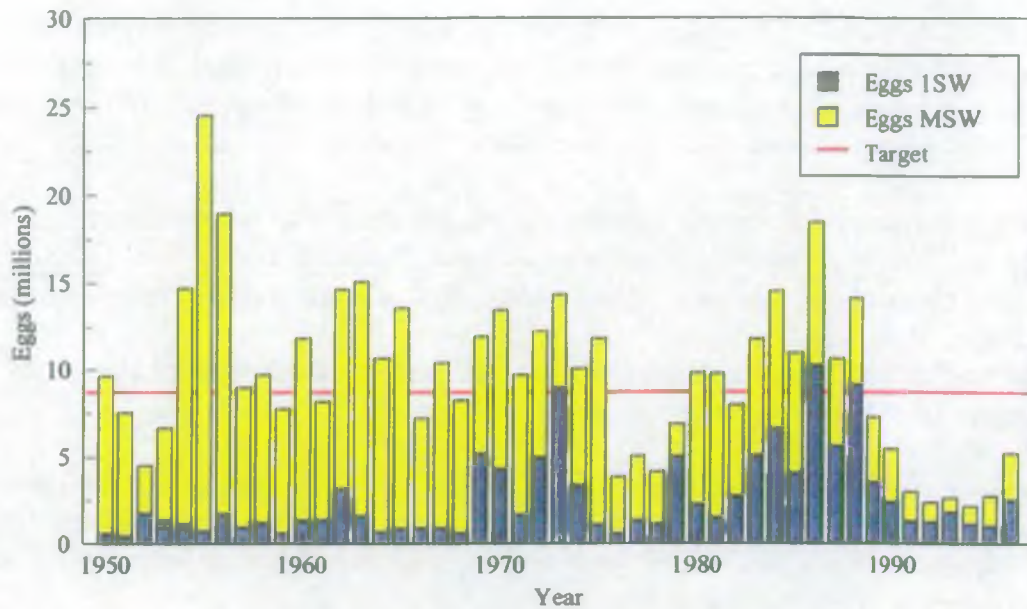
- The Consultation Document and final Salmon Action Plan are produced by the local Area Environment Agency office. A review will be published in 5 years time in a similar format to this Plan. It will report on progress over the past 5 years and examine the need to update actions in the light of changes in the Hampshire Avon catchment and advances in our knowledge. Annual progress on actions will be monitored via the Local Environment Agency Plan (LEAP) review process.
- A Regional Report (for the South West Region) will be produced annually. This will consist of an overview of the key points in the Region, and, for individual rivers having a SAP, there will be reference to significant local events and tabular summaries of:
 - performance of rod and net fisheries;
 - participation in rod and net fisheries;
 - status of stocks with respect to spawning target levels;
 - planned action and progress against Plans.The Regional Plan will be reported at the April meeting of the Regional Fisheries Advisory Committee (RFAC).
- The National Plan will draw out key points in a National overview and collate the tables of Regional plans. This will be produced annually, by March of each following year.

5. MINIMUM ACCEPTABLE SPAWNING LEVELS

Central to the Action Plan is a minimum spawning level (egg deposition rate per year) below which the Hampshire Avon's salmon stock should not fall.

The setting of objectively derived minimum acceptable spawning levels for Atlantic Salmon is now being actively promoted by the North Atlantic Salmon Conservation Organisation (NASCO), and has been used successfully in North America for several years.

This targeted minimum acceptable spawning level will be subject to refinement as methodologies for its determination develop in this country, but for the first time a spawning level commensurate with the best possible long term sustainable yields has been estimated.



Historic egg deposition on the Hampshire Avon
Target egg deposition is indicated by the red line

Whilst over the last two years the stock has begun to show signs of resilience, egg deposition in 1996/97 was estimated at only 61% of this threshold level, calculated as 8.53 million eggs for this river system.

6. THE CONSERVATION STATUS OF ATLANTIC SALMON

The River Avon and its tributaries are of national and international importance for their wildlife communities. The majority of the river system has been designated as a river Site of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act, 1981. The diverse fish fauna is one of the reasons for notification. A conservation strategy for the river SSSI is currently being produced jointly by the Agency and English Nature. This will embody a strategy for the protection and enhancement of salmon populations derived from this Action Plan.

Because the actions being put forward are in some cases tackling quite major areas of environmental perturbation they will also potentially benefit a range of other species and should therefore integrate well into the Strategy, and also into the Agency's LEAP for the Hampshire Avon.

The River Avon is being considered as a possible Special Area of Conservation (pSAC) under the EU Habitats Directive because it contains habitat types and species which are rare or threatened within a European context. Atlantic salmon is one of the species of European importance.

Under the Habitats Directive Member States are obliged to protect species defined as being of Community interest and so maintain them at a favourable conservation status over the Community as a whole. At each individual catchment and population level, a "favourable condition" must be maintained. This requires that:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.

A favourable condition has not yet been defined for the qualifying interests on the Hampshire Avon. The targets set out in this Action Plan contribute to a basis for determining a favourable condition for salmon on the Avon and the actions in this Plan form the measures to be taken to ensure it is achieved and maintained.

As part of this process the Agency is required to review its existing consents within the pSAC and to modify or revoke them if implementation could damage the conservation interest of the site.

At the 1992 Rio Earth Summit the UK Prime Minister, and 150 other heads of state, signed the Convention on Biological Diversity which addressed the worldwide loss of species, habitats and genetic diversity, and proposed that each country take responsibility for its own biodiversity. Following this a national UK steering group produced Biodiversity Action Plans (BAP) for 116 species and 14 key habitats, of which "chalk rivers" is one. The objectives and proposed targets of the chalk rivers BAP are:

- maintain the characteristic plants and animals of chalk rivers, including the winterbourne stretches;
- restore water quality, flows and habitat diversity where they have deteriorated on rivers designated as SSSIs;
- review the need and potential for restoration on the remaining chalk rivers, in consultation with local communities, and plan for these where cost-effective.

This national BAP refers specifically to Atlantic salmon, which is an integral part of the biodiversity of chalk rivers, and to the Avon, one of the eight chalk rivers in England to be designated as a SSSI. Actions in support of this will also derive from the Salmon Action Plan, and be incorporated in a LEAP for the Avon.

7. ACTIONS PROPOSED WITHIN THE SALMON ACTION PLAN

At the time of writing we are aware that individuals, organisations and salmon interests on the Avon wish to help the Agency with further resources to carry out the proposed actions. These resources are in the process of being assembled and made available and we have therefore set out the actions for which we have resources at present and also those which could be undertaken as further resources become available.

We would see the extra resources as allowing more rapid progression towards minimum acceptable levels of stock, and better maintenance of stocks and habitats in the longer term.

8. FINANCIAL CONTRIBUTIONS

For many of those respondents who have expressed a willingness to contribute to actions in the Plan it may be that the best route for their contribution is via one of the Fishery Associations active with respect to Avon salmon fisheries. Would-be contributors can ascertain the positions being taken by the Associations with respect to the Plan and decide whether they offer an appropriate route into the process. Others may wish to carry out more independent actions, and the Agency will collaborate with those concerned in all these routes to facilitate the effective and efficient use of resources to carry out the desired Actions.

It is likely that practical arrangements for the implementation of actions will vary considerably and the Agency will collaborate with Associations and with individuals to arrive at arrangements acceptable to all involved and able to transfer funding efficiently into actions. Contributors may have their own priorities for actions and in each case acceptable arrangements will need to be arrived at by discussion.

The principle of "the polluter pays", widened to include all environmental perturbation, will be pursued wherever possible during the implementation of this Plan.

9. ACTION PLAN SUMMARY

ACTION (priority) VH = very high H = high M = medium	COST (£K) AND TIMESCALE					FUNDING SOURCES	REP
	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002		
IMPROVE UNDERSTANDING							
Improve understanding of mechanisms controlling chalk stream salmon populations to allow more efficient management (<i>jointly with Southern Region</i>) (VH)	10	10	10	10	10	Agency/MAFF/IFE	1
IMPROVE MONITORING OF STOCKS							
Existing programme (H)	25	25	25	25	25	Current Agency Fisheries Budget	2
Count salmon currently bypassing resistivity counters (VH)		(3)	(3)	(3)	(3)	(to be undertaken as resources become available)	3
Count smolts (M)		(25)	(25)	(15)	(15)	(to be undertaken as resources become available)	4
Increase frequency of juvenile monitoring on Nadder from every 5 years to annually (H)	(4)	(4)	(4)	(4)	(4)	(to be undertaken as resources become available)	5
VARY EXPLOITATION LEVELS							
Ensure increased escapement from nets - particularly 2SW salmon	Introduce byelaws (H)	1				Agency Fisheries Budget	6
	Existing and additional levels of catch-&-release and/or transport past Harbour until spawning levels are satisfactory (H)	4	(4)	(4)	(4)	Agency and WSA (Tesco) (to be undertaken as resources become available)	7
Ensure increased escapement from rods - particularly 2SW salmon	Introduce byelaws (H)					Cost covered in 6	8
	Continue to promote catch-&-release until spawning levels are satisfactory (H)	2	2	2	2	Agency Fisheries Budget and existing partnership with WSA	9

IMPROVE KEY AREAS OF HABITAT								
Spawning medium	Existing level of gravel cleaning (H)	3.5	3.5	3.5	3.5	3.5	Current Agency Fisheries Budget	10
	Enhanced level of gravel cleaning and evaluation and development (M)	(5)	(5) (15)	(5) (15)	(5)	(5)	(to be undertaken as resources become available)	11
	"Landcare" (H)	40	(20)	(20)	(20)	(20)	Agency (to be undertaken as resources become available)	12
	Promote fencing out of stock to reduce ingress of silt where significant (M)		(2)	(2)	(2)	(2)	(to be undertaken as resources become available)	13
Migration improvement	Existing (H)	4	4	4	4	4	Agency Fisheries Budget	14
	Outstanding elements of Dr Solomon's recommendations with evaluation (M)	(10)	(10)	(10)			(to be undertaken as resources become available)	15
	Increase accessible range (M)	(10)	(20)				(to be undertaken as resources become available)	16
Optimise flow levels in lower Avon (H)							Agency Water Resources Budget	17
Optimisation of channel morphology for salmon life stages	Existing (H)	5	5	5	5	5	Agency Flood Defence Budget, and Fisheries Budget	18
	Expanded programme (M)							19
<i>Investigation into why the stretch between Downton and Fordingbridge is under-used by spawning salmon. Action if appropriate. (H)</i>		2.5					Agency	20
AGENCY BUDGET		97	49.5	49.5	49.5	49.5	295	
EXTRA FUNDS NEEDED		29	108	88	53	53	331	
TOTAL FUNDS		126	157.5	137.5	102.5	102.5	626	

9.1 COMMENTS FOR ACTION TABLE

- 1 This project will be fully financed and is being carried out jointly by MAFF, the Environment Agency and the Institute of Freshwater Ecology. Although we have taken a view as to the major factors influencing stocks of salmon in the Avon at present, we will adjust our priorities if necessary in the light of outputs from this project.

Some respondents gained the impression from our Consultation Plan that the R&D would precede action on the ground. In fact the R&D is programmed to run parallel to action. We have already taken a view as to the most important constraints acting and have begun to act on them. The R&D will serve the purpose of checking the validity of this view and highlighting any new constraints needing attention. We will keep our approach under review and be willing to alter our priorities and approach if necessary in response to outputs from the R&D.

Several respondents felt that action on predation was necessary and justifiable. The importance of predation forms part of the remit for the R&D project and output from this will allow the potential benefits of control measures to be better evaluated.

- 2 Our existing programme does not provide a reliable total stock estimate *and respondents tended to be supportive of increasing the commitment of resources to this area.*
- 3 This additional expenditure would give us the resources to attempt to achieve a total count of upstream migrant adult salmon. This would represent a very significant step forward in our ability to manage the stocks optimally. In particular we would be able to detect trends in abundance of particular run components such as spring salmon.
- 4 Expenditure of £25,000 in 1998/99 would allow a feasibility study of approaches to counting the smolts leaving the Avon each year. Further capital and revenue expenditure thereafter would then be needed if a decision was taken to proceed. Were it to be possible to achieve fish-friendly reliable counts another very significant step towards better management of stocks would have been taken. In the short term, we would be much better informed as to year-to-year fluctuations in smolt production and likely impacts on catches and stocks, but in the longer term we would be able to build up a stock-recruitment relationship for the river and optimise exploitation of the stocks.
- 5 Because of the importance of the Nadder as a breeding tributary we would like to survey parr populations within it each year *and the responses received suggested support for the extension of annual parr monitoring of the Nadder.*
- 6 The Agency will apply to MAFF to introduce a byelaw which will cut net exploitation of 2SW salmon. This will add to protection of the larger, earlier running fish and will give equitable impact on total catch of rods and nets post 1993.

- 7 Owner groups and Associations may wish to enter into catch-and-release arrangements with nets (the Agency will act as honest broker), as has been done this year by Wessex Salmon Association, or even pay nets not to fish.
- 8 The Agency will apply to MAFF to introduce byelaws which will further cut salmon rod catch as a proportion of the run, with particular impact on earlier running fish. The overall impact of this and the previous set of byelaws should be similar to that on net fishermen post 1993.
- 9 The Agency will continue with its promotion of catch-and-release until spawning levels are satisfactory. In this action it has been assisted by Wessex Salmon Association (WSA) through a sponsorship scheme and it is hoped that this assistance will continue. The WSA funded net catch-and-release in 1997 is linked to a proposal to take small numbers of salmon from the river for hatchery use later in the year.
- 10 The Agency will continue with its present level of gravel cleaning, budgets allowing. Currently about 2,000 m² of gravel is cleaned each year and indications are that salmon are using cleaned gravel and breeding successfully.
- 11 There is scope to carry out more gravel cleaning to the benefit of stocks if resources can be found. *There is a real need to fully investigate and quantify the effectiveness of present measures and to look at improved approaches if extra resources can be found.*
- 12 Landcare is one of the first large scale projects of its kind to attempt to reduce soil run-off to a river and enhance spawning gravels in a long term sustainable manner. Agency funding has been found for the initial year of the project. There is great scope to develop this scheme if extra funding can be found, and the benefits to fisheries and to the whole river community could be very significant.
- 13 Some scope exists to reduce silt inputs where these are caused by heavy poaching of banks by cattle.
- 14 There is an ongoing need for manpower input to ensure free passage on the Avon for both adults and smolts at critical times of year. This exists because of the high level of human activity impacting on the river continuously. The Agency will continue to fund this.
- 15 Although the higher priority recommendations of Dr Solomon's 1993 report have been complied with there is still scope for improvement if resources can be found. There is also scope for testing, evaluation and improvement of existing mechanisms.
- 16 If resources can be found it would appear desirable to examine the feasibility of extending the nursery habitat available for salmon. The Ebble in particular looks to have potential and we have completed some of the groundwork on the obstructions to migration which exist.

- 17 Existing impacts on migration of adults have been thoroughly researched already and recommendations for improvement made. These will be addressed as licences are reviewed.

Several respondents felt that abstraction should have been given the highest priority. The Agency has given it a high priority. Its predecessors have carried out the necessary research to quantify its impact on the Lower Avon and work is currently being undertaken on the Wylye. In addition, because of the requirement of the Habitats Directive, all the major abstraction licences on the Avon will have to be reviewed with respect to their impact on salmon and action taken to counter any adverse impacts demonstrated. It is not possible to estimate future costs in this area but funding will be found from the Agency's Water Resources budget.

- 18 The Agency will continue to ensure that flood/defence works do not cause a reduction in this aspect of habitat quality for salmon and build in enhancements to habitat wherever possible.

- 19 If the R&D project (1 above) indicates that worthwhile gains can be made, we will seek funding sources for modification of channel morphology for the benefit of salmon.

Respondents have stressed the need for action in this area (replacement of lost gravels etc.) and we will use information from work in Southern Region and output from the R&D project as guides to the likely benefits and costs. At present it is not possible to estimate future expenditure.

- 20 Respondents have registered concern at the low level of spawning through this area. The Agency will undertake to reinvestigate the reasons for this to assess the constraints acting and any actions needed.

10. SUMMARY

If the actions proposed above are taken forward, given reasonably normal climatic and oceanic conditions over the next few years the wild salmon stock of the Hampshire Avon should be able to grow to a minimum level at which it can play its proper part in the river's ecology and the local economy and once more symbolise the good health of the river. Because actions proposed include those which tackle significant areas of adverse human impact on the river environment, widespread benefits to conservation should also accrue.