REF.	ACTIONS	PARTNERS (lead partners in bold)
26.1	**Develop and implement methodologies for monitoring numbers and distribution of adult and juvenile salmon in the catchment. *See Card 32.***	**RDT / DDSFB / DSFIA / FRS / MDP**
26.1.1	Review existing survey programmes.	RDT / DDSFB / DSFIA / FRS
26.1.2	Undertake surveys of fish stocks (electro-fishing surveys and redd counts) using approved methodology.	RDT / DDSFB / DSFIA / FRS
26.2	**Identify areas of good quality habitat for the various life stages of salmon / and those areas where habitats have been degraded.**	**RDT / DDSFB** / SNH / FRS / SEPA / NESBReC / CASS
26.2.1	Assess existing habitat data.	SNH / DDSFB / CASS / RDT
26.2.2	Where existing data are not available / undertake instream and bankside habitat surveys using approved methodology (to include tributaries).	RDT / DDSFB
26.2.3	Extend water quality monitoring throughout catchment / particularly into intensively used sub-catchments.	RDT
26.3	**Mitigate against over-exploitation and predation.**	**RDT / DDSFB** / SGRPID / DSFIA
26.3.1	Review fishing season.	SGRPID / DDSFB
26.3.2	Continue to review and promote catch and release policy.	DDSFB / RDT / DSFIA
26.3.3	Assess the impact of predation by sawbill ducks and mink.	RDT / DDSFB
26.3.4	Develop programme of mink control and research. *See Card 30.*	RDT / DDSFB
26.4	**Maintain / enhance and recreate habitat in order to promote suitable conditions for all life stages of Atlantic salmon as part of a dynamic river system.**	**SEPA / AC / ACC / RDT/ DDSFB / SGRPID / SNH** / NELBAP / FRS / **Proprietors / Land managers** / MI
26.4.1	Promote and implement best practice guidance as laid out in existing codes.	**SEPA / AC / ACC / RDT/ DDSFB / SGRPID / SNH** / NELBAP / FRS / **Proprietors / Land managers** / MI
26.4.2	Develop a new initiative to transfer 3-Dee Vision approach (demonstration sites etc) to other parts of catchment.	AC / SNH / MI / SEPA
26.5	**Prevent operations that would have an adverse impact on any component of the salmon population.**	**SEPA / SGRPID / SNH / DDSFB**
26.5.1	Provide information to developers, land owners and land managers on the SAC, permitted development rights and the requirement for appropriate assessments.	SEPA / SGRPID / SNH / DDSFB
26.5.2	Ensure removal of permitted development rights for operations that could have a significant effect upon salmon habitats.	SEPA / SGRPID / SNH / DDSFB
26.5.3	Ensure application of appropriate assessments into plans or projects that are likely to have a "significant effect" upon Atlantic salmon.	SEPA / SGRPID / SNH / DDSFB
26.5.4	Eliminate dredging as a drainage and flood defense measure	SEPA / SGRPID / SNH / DDSFB
26.6	**Prevent the introduction of disease / parasites and alien fish species to the catchment.**	**RDT / DDSFB / ASFB**
26.6.1	Raise awareness of disease risks to native fish stocks (carried from water to water on wet tackle etc) amongst anglers / proprietors and ghillies.	RDT/ DDSFB
26.6.2	Maintain code of practice for stocking and develop to include all fish species	RDT/ DDSFB
26.7	**Ensure free passage of fish to suitable habitats. *See Card 18.***	**DDSFB / SEPA / ACC / AC**
26.8	**Determine impact of current and future abstraction on Atlantic salmon to ensure sufficient water is present for them to migrate and return to spawn. Review abstraction from the River Dee. *See Card 14.***	**SEPA / DDSFB / SNH** / SW
26.9	**Continue to disseminate information about Atlantic salmon and the factors that affect them to all parts of the local community.**	**RDT / DDSFB / SNH**

Acronyms are listed in the centre of this Action Card

26.Atlantic Salmon.indd Spread 1 of 2 - Pages(4, 1)



atlantic salmon 26

SPECIES

OBJECTIVE 26. Conserve and enhance the population, distribution and range of genetic sub-populations of Atlantic salmon *Salmo salar* across the naturally accessible parts of the catchment.

BACKGROUND

The River Dee catchment supports one of the healthiest populations of Atlantic salmon in western Europe and has been designated as a Special Area of Conservation in part due to the international importance of this population. While the spring running salmon are going through a period of decreased abundance, numbers of later running salmon and grilse appear to be increasing (River Dee Trust data).

The River Dee spring fishery is world famous. The river's stock of adult salmon supports a rod fishery of 5000 salmon a year, generating in excess of £6 million for the local economy and employs 500 full-time equivalent jobs within the catchment (Radford *et al.*, The economic impact of game and coarse angling in Scotland).

Several issues that are within the scope of this management plan threaten the health of the catchment's salmon population. These include: degraded water quality, predation of adults and juveniles, man-made barriers to fish passage, the introduction of diseases, parasites and alien species and the degredation of juvenile and spawning habitat through civil engineering and pollution.

The decline of spring run salmon is of particular concern. Hay (1995) has indicated that current smolt production is in the region of 50% of the long term average. This change in the salmon population has variously been ascribed to acidification, over-abstraction, degradation of spawning habitats and poor sea survival.

ISSUES

- Existing monitoring has been somewhat ad hoc and a more coordinated programme of monitoring is required to inform conservation activities.
- Adult salmon are most vulnerable to predation by mink and goosander in the estuary and immediately prior to spawning, especially in small tributaries where they have no room to escape.
- Dredging and sedimentation can seriously degrade or destroy instream habitat and so reduce the stream's ability to support fish. Over-grazed or otherwise damaged banks make the river shallow and wide, and unsuitable for parr. Riparian habitat is vital, stabilising water channels by ensuring banks are firmly bound, providing invertebrate habitat, creating shading from direct summer sun and providing protection from floods and run off.
- The introduction of non-native species, (including non-native salmon) can lead to significant declines in native fish species, including Atlantic salmon:
  - Successful breeding of non-native fish in the River Dee system could lead to a loss of salmonid habitat.
  - Interbreeding of escaped fish with wild stocks has the potential to affect wild fish genetics. Even if infertile fish are used to stock ponds, they may compromise the spawning behaviour of wild fish.
  - Some species predate on salmonids.
  - Non native fish can introduce non native parasites and diseases. There has been a recent dramatic increase in the incidence of non-native diseases introduced by large scale movements of fish and other species. Imports of fish to Scotland have brought in many diseases that native species have little or no resistance to, and man has introduced many alien species. Other parasites, such as *Gyrodactylus salaris*, are not present but would have serious consequences for salmon populations if introduced.
- In order to enable salmon to complete their lifecycle they need to be able to access all suitable habitat and not be obstructed by man-made structures.
- When river levels are low, salmon can become trapped in pools and prevented from migrating. In such conditions, abstraction of groundwater near the river

WHO IS INVOLVED?

Association of Salmon Fishery Boards

Aberdeenshire Council

Aberdeen City Council

Conservation of Atlantic Salmon in Scotland - LIFE-Nature project

Dee District Salmon Fishery Board

Dee Salmon Fishery Improvement Association

Fisheries Research Services

Land managers

Middle Dee Project

Macaulay Institute

North East Local Biodiversity Action Plan

North East Scotland Biological Records Centre

Proprietors

River Dee Trust

Scottish Environment Protection Agency

Scottish Government Rural Payments & Inspections Directorate

Scottish Natural Heritage

Further copies can be downloaded at www.theriverdee.org. For further information contact the Dee Catchment Officer
c/o The Macaulay Institute, Craigiebuckler, Aberdeen AB15 8QH Telephone: 01224 498200 email: info@theriverdee.org

deecatchment partnership

reduces the potential input to the river, reducing river levels still further.

- Industrial or housing developments can impact heavily on the flood plain and riparian zone, both directly and through the development of their associated infrastructures (roads, sewerage, waste water, potable water supply, flood defence).

EXISTING / RECENT INITIATIVES

- The River Dee Trust monitors all fish species throughout the catchment (adults and juveniles); Fisheries Research Services has research traps on Girnock and Baddoch burns.
- There is a voluntary catch and release policy that ensures over 95% of caught salmon are released.
- The River Dee Trust and the Dee District Salmon Fishery Board have issued a Code of Practice for Stocking on the Dee which manages the capture of broodstock and the conduct of stocking. Under this code hatchery stocking has historically been carried out in areas where man-made obstacles prevent adult access.
- Hydro-geomorphology survey of River Dee main stem (SNH).
- The Dee District Salmon Fishery Board has funded and undertaken riparian and instream habitat enhancement projects since 1999.
- 3-Dee Vision Project (Davan, Tarland Burn & Elrick burn catchments). The aim of the project was to help mitigate various agricultural and industrial impacts as well as to highlight awareness of the Water Framework Directive.
- Conservation of Atlantic salmon in Scotland (CASS) - a salmon conservation project co-financed by the EU under the LIFE-Nature programme and includes partners from both the public (District Salmon Fisheries Boards, Fisheries Trusts, Scottish Natural Heritage, The Scottish Government, Forestry Commission, Crown Estate) and private sectors (Scottish Hydro Electric). The Dee's designation as a Special Area of Conservation has enabled a successful grant application to this project, amounting to almost £750,000. Habitat enhancements have been undertaken throughout the catchment:
  - The main focus has been on creating riparian buffer strips through fencing, with suitable provision of stock watering and crossing points.
  - In recent years efforts to reduce sediment loadings are being addressed through silt traps in field ditches.
  - A coppicing programme has been initiated which addresses areas where a dense canopy is restricting light to the water surface and riparian zone.
  - Wherever possible, farmers have been encouraged to participate in the various Government run agricultural schemes.



Atlantic salmon (3-Dee Vision)

- The Dee District Salmon Fishery Board produces guidelines, and provides disinfectant for cleaning equipment to prevent introduction or spread of disease and parasites.
- The Dee District Salmon Fishery Board monitors numbers and impacts of avian predators and undertakes a cull under licence from the Scottish Government if required.
- The Dee Salmon Action Plan is a locally based management plan that examines the issues facing salmon and how they should be addressed
- North East and Cairngorms Local Biodiversity Action Plans
- DeeCamp – used for recording assessments

ACTIONS REQUIRED

- Extend monitoring to gather catchment-wide information on all components of the salmon population.
- Identify good quality habitat (and areas where habitats have been degraded).
- Review exploitation policies.
- Establish research and control programmes for American mink population.
- Encourage/ fund/ carry out catchment wide best practice for riparian management. Undertake and promote habitat improvements.
- Prevent damaging operations.
- Increase disease and parasite biosecurity measures at local (and national) levels.
- Ensure free passage of fish to suitable habitats by removing or easing man-made restrictions.
- Determine impact of current and future abstraction on Atlantic salmon.
- Maintain and develop communication about industrial or housing developments issues between the Scottish Environment Protection Agency, Scottish Natural Heritage, Scottish Water, Planning Authorities, the Dee District Salmon Fishery Board and other conservation bodies. The grey areas - where no specific legislation or protection seems to apply - need to be addressed and rectified.

GUIDELINES AND INFORMATION

See Action Pack Annex for information sources

- Managing River Habitats for Fisheries (SEPA)
- Best Practice Guidelines for River Engineering: Works to Watercourses and their Banks (Aberdeenshire Council).
- Various guidelines on riparian and instream works (Farming & Wildlife Advisory group (FWAG) / DDSFB / SEPA).
- Best practice guidelines are available from DDSFB / FWAG / SNH / SGRPID / SEPA on a variety of topics related to riparian and aquatic environments.
- Agricultural guidelines.

LEGISLATION

See Action Pack Annex for information sources

- Fisheries Working Group directive
- Freshwater Fisheries Directive 2006/44/EC
- Surface Water (Fishlife) (Classification) (Scotland Direction 1999

BENEFITS TO PROTECTED SPECIES

The following specially protected species will benefit from the Actions:

- Freshwater pearl mussel *Margaritifera margaritifera*
- Atlantic salmon *Salmo salar*

RELATED ACTION CARDS

14. Abstraction
18. Obstacles to fish passage
27. Freshwater pearl mussel
32. Fish data

AC Aberdeenshire Council **ACC** Aberdeen City Council **ASFB** Association of Salmon Fishery Boards **CASS** Conservation of Atlantic Salmon in Scotland (LIFE-Nature Project) **DDSFB** Dee District Salmon Fishery Board **DSFIA** Dee Salmon Fishery Improvement Association **FRS** Fisheries Reaearch Services **MDP** Middle Dee Project **MI** The Macaulay Institute **NELBAP** North East Local Biodiversity Action Plan **NESBReC** North East Scotland Biological Records Centre **RDT** River Dee Trust **SEPA** Scottish Environment Protection Agency **SGRPID** Scottish Government Rural Payments & Inspections Directorate **SNH** Scottish Natural Heritage

deecatchment partnership