REF.	ACTIONS	PARTNERS (lead partners in bold)
13 .1	**Encourage compliance with, and improve quality of, procedural controls during fuel transfer and loading, and bilge and sewage water disposal.**	**AHB / MCA / SEPA**
13.1.1	Raise awareness of MCA code of practice and pollution causes.	MCA
13.1.2	Raise awareness of bye-law 82 (discharges from vessels)	AHB
13.1.3	Form working group to include AHB, SEPA, MCA, Vessel Operators and Fuel Suppliers to encourage best practice.	AHB / SEPA / MCA
13.2	**Reduce the risk of pollution from surface water drainage networks in the port's operational areas.**	**AHB** / Harbour tenants
13.2.1	Integrate drainage plan with existing contingency plans.	AHB / Harbour tenants
13.2.2	Mark surface water drains according to SEPA guidelines.	AHB
13.3	**Employ dredging practices that allow migratory fish access to/from River Dee.**	**AHB / FRS**
13.3.1	Regularly review dredging practices in light of technological advances and regulatory changes.	AHB / FRS
13.4	**Minimise riverside lighting, whilst ensuring relevant safety standards are met, to reduce the effect on migration of fish to/from River Dee.**	**AHB** / Harbour tenants
13.4.1	Carry out a light intensity survey in areas adjacent to the river channel.	AHB / Harbour tenants
13.4.2	Start a light pollution initiative to ensure variable intensity lighting system is used effectively.	AHB
13.5	**Minimise, according to BATNEEC principals, the environmental impact during the construction and maintenance of harbour facilities, particularly the potential impacts on migratory fish.**	**AHB / FRS** / Contractors / DDSFB / RDT / SNH
13.5.1	Develop internal and contractor training schemes to meet the requirements of PPG 5, PPG 6 and PPG 23.	AHB / Contractors
13.5.2	Consider, when justified, protocols to reduce or monitor underwater noise during piling work.	AHB / FRS / DDSFB / RDT / SNH

Acronyms are listed in the centre of this Action Card

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WATER QUALITY

OBJECTIVE 13. Reduce the impact of activities linked to Aberdeen harbour on water quality.

BACKGROUND

Maritime activity has taken place on the estuary of the River Dee for hundreds of years. The modern port is one of the UK's busiest and is managed by Aberdeen Harbour Board (AHB). The port is a focal point for industrial and commercial activity contributing more than £100 million into the local economy each year. Atlantic salmon (*Salmo salar*) pass through the harbour as they migrate upstream and conditions suitable for this journey must be preserved.

ISSUES

- Morphological change (the area is classed as a Heavily Modified Water Body)
- Impacts of diffuse and point source pollution.
- The high levels of maritime activity combined with high-risk periods in operational processes results in an acceptable frequency of small pollution incidents in the port.
- Large portions of the estates drainage flows directly to the River Dee providing a pathway for pollution to enter the water. Petroleum interceptors and settling tanks (installed as quays are renewed) now protect some areas, others drain to the sewer network.
- The operation of dredging vessels in the Navigation Channel could deter migratory fish from entering the River Dee by generating elevated levels of underwater noise. Current working practices limit this impact and provide large windows for Salmon movement to take place.
- Light pollution could deter migratory fish from entering the River Dee during the hours of darkness. Current working practices limit this impact.
- The environmental impact of elevated underwater noise during piling works associated with quayside construction and demolition could deter migratory fish from entering the River Dee. Current working practices limit this impact and provide large windows for Salmon movement to take place.

EXISTING / RECENT INITIATIVES

- AHB continues to carry out monitoring of local sediment and air quality. This project has recently been expanded to



Atlantic salmon must pass through Aberdeen harbour in order to reach their spawning grounds in the Dee catchment (Aberdeen Harbour Board)

WHO IS INVOLVED?

- Aberdeen Harbour Board
- Contractors
- Dee District Salmon Fishery Board
- Fisheries Research Services
- Harbour tenants
- Maritime & Coastguard Agency
- River Dee Trust
- Scottish Environment Protection Agency
- 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

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include water quality indicators.

- Legal obligations require operational areas to be lit to two minimum standards at night. Light pollution is minimised through a user operated system that increases lighting intensity to the higher standard when work is being carried out, and then reduces it to the lower standard when the site is 'in standby'.
- During piling operations AHB is committed to using vibro-pilers whenever possible to limit the impact of underwater noise on migratory fish. AHB also abides by restrictions on piling hours that ensure large migration windows in each 24 period.

ACTIONS REQUIRED

- Continued effort to improve procedural controls, awareness of legal consequences and environmental impacts needs to take place.
- Contingency plans for terrestrial spills should incorporate information about the drainage network, and port-users should be aware of the consequences of a terrestrial spill.
- Regular evaluation of the best available techniques and technology could reduce the impact further.
- However, promotion of these practices could improve their efficacy and light intensity monitoring could reduce the impact further.
- Research and monitoring is needed to inform partners in this work of the need for, and effectiveness of, mitigation measures.

LEGISLATION

See Action Pack Annex for information sources

- To ensure protection for regulatory fish at the start of their journey inland, part of Aberdeen harbour is within the River Dee Special Area of Conservation (SAC). These special protections are enshrined in the Conservation Regulations, which incorporate the objectives of the Habitats Directive.
- Organisations operating in the port area must seek authorisation under two key pieces of legislation: the Water environment and Water Services Act (WEWS) 2003 Controlled Activities Regulations (CAR), which regulates the use of water resources (such as surface water discharges) and the Pollution, Prevention and Control Regulations, which cover particular industrial processes.
- Maritime operations and pollution from vessels and contingency planning are affected by the Harbour Bye-Laws and numerous sets of regulations made under the Merchant Shipping Act, which also places contingency planning obligations on AHB.
- Harbour engineering works, such as dredging, construction and demolition fall under the Coast Protection Act, Food and Environmental Protection Act and the CAR. The latter two include parts of the Water Framework Directive (WFD). Various laws such as the Harbour Works Act and Marine Works (EIA) Regulations require appropriate assessment of environmental impacts when planning major works.

GUIDELINES AND INFORMATION

See Action Pack Annex for information sources

Guidance on general site management where water bodies may be at risk

- Getting Your Site Right (SEPA)
- Pollution Prevention Guidelines (PPG) 5 Works in, Near, or Liable to Affect Watercourses (SEPA)
- PPG 23 Maintenance of Structures Over Water (SEPA)

Guidance on effective contingency planning and safe fuel transfer operations

- PPG 21 Pollution Incident Response Planning (SEPA)
- Marine Conservation Association (MCA) Bunkering Code of Practice (MCA Aberdeen)

Best practice information on construction and demolition in coastal areas

- C584 Coastal and Marine Environmental Site Guide (CIRIA)

BENEFITS TO PROTECTED SPECIES

The following specially protected species will benefit from the Actions:

- Atlantic salmon *Salmo salar*
- Otter *Lutra lutra*



Aberdeen harbour survey strip (Aberdeen Harbour Board)

13 WATER QUALITY

RELATED ACTION CARDS

26. Atlantic salmon

27. Freshwater pearl mussel

AHB Aberdeen HArbour Board **DDSFB** Dee District Salmon Fishery Board **FRS** Fisheries Research Services **MCA** Maritime & Coastguard Agency **RDT** River Dee Trust **SEPA** Scottish Environment Protection Agency **SNH** Scottish Natural Heritage

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