



Aberdeen Harbour

Our environment

May 2005

Contents

Introduction	3
Environmental Policy	3
A world class port	4
Key Facts 2004	4
Organisational Structure	5
A diverse environment	6
Dee Catchment Management Plan	7
Dee Special Area of Conservation	7
Key issues	8
Dredging	8
Tributyl-Tin	8
Oil Spills	9
Ships Waste	9
Managing our obligations	10
Environmental Monitoring	10
Our objectives for 2005	11

Common Abbreviations

AHB	Aberdeen Harbour Board
AQMA	Air Quality Management Area
CMP	Catchment Management Plan
FRS	Fisheries Research Services
MCA	Maritime & Coastguard Agency
PERS	Port Environmental Review System
PPC	Pollution Prevention and Control
SAC	Special Area of Conservation
SEPA	Scottish Environment Protection Agency
SNH	Scottish Natural Heritage
WFD	Water Framework Directive

Introduction

In October 2003 Aberdeen Harbour Board became the first port in Scotland, and only the fourth in Europe, to receive the ECOPORTS Port Environmental Review System (PERS) certificate.



PERS was developed by the ECOPORTS Foundation to improve standards of environmental performance among European port authorities. Greater transparency and knowledge sharing is part of the best practice encouraged by the Foundation and in September 2003 the Board approved a new environmental policy statement which included, for the first time, a commitment to publish environmental information.

This report aims to complement existing publications by clearly illustrating the port's activities, organisation and describing its environmental aspects and objectives.

Environmental Policy Statement

Aberdeen Harbour Board is responsible for the management of Aberdeen Harbour including: conservancy, pilotage and the maintenance and development of the port. The Harbour employs over 120 people and controls some 150 hectares of land and water at the mouth of the River Dee.

The Board recognises its environmental responsibilities and is committed to:

- Continual environmental improvement, prevention of pollution and due regard for nature conservation.
- Providing a framework for the setting, monitoring and regular review of environmental objectives and targets and making the results available as an annual report.
- Compliance with applicable legislation, regulations and other standards to which it subscribes and, where practical, exceeding these requirements.

Furthermore, the Board shall:

- Through research, consultation and review develop a thorough knowledge of the aspects of its activities which have a significant impact on the environment, and take steps to mitigate or prevent these impacts.
- Make sure its environmental programme remains appropriate and its performance satisfactory by performing regular reviews that consult and involve employees, the local community and relevant organisations.
- Encourage staff and contractors to consider the environment in all their activities by developing systems of work that use resources more efficiently, use fewer harmful materials and reduce waste that cannot be reused or recycled.
- Identify potential risks and develop plans of preparedness to cope with any incident in the port liable to cause environmental harm.

This policy shall be made available to all interested parties.

R B Braithwaite, Chief Executive
September 2003

A world class port

Aberdeen Harbour Board is an independent statutory authority created by an Act of Parliament. The Board is responsible for the administration, maintenance and development of the port. Aberdeen Harbour is Britain's oldest business and, after eight centuries of enterprise, remains a thriving community at the heart of a busy city.

The port is situated at the mouth of the River Dee in North East Scotland and comprises an estate of around 154 hectares with 6 km of quays including 14 deep water berths capable of accommodating vessels up to 8.5 m draught. The largest vessel to visit the port was the 18,286 gross tonne *Finnfighter* in March 2004.

North of the harbour lies Aberdeen Beach - 3.8 km of sand extending as far as the mouth of the River Don and south is the rocky outcrop of Girdleness Head. Inland the port is surrounded by the city of Aberdeen.

Aberdeen Harbour is a global hub for the support of offshore oil and gas activity and the home of lifeline ferry services to the Northern Isles. There is a brisk trade in refined products, paper products, grain and scrap as well as a busy fishmarket. The compact port regularly sees more than 60 vessel movements every day.

Like the rest of Aberdeen, the harbour has changed dramatically over the last thirty years. Because the Harbour is a Trust Port there are no shareholders or owners - all profits are reinvested in the port for the future benefit of all stakeholders. Since 1970 over £130 million has been used to develop Aberdeen Harbour into a world class port and a further £30 million will be invested in the years to 2009.

Key Facts 2004

Tonnage of shipping:
21.1 million tonnes

Vessel arrivals:
8,334

Imports and Exports:
4.7 million tonnes

Passengers:
132,340

Employees
127

Aberdeen Harbour is Britain's oldest business and, after seven centuries of enterprise, remains a thriving community at the heart of a busy city.

Points of Interest

- 1 River Dee
- 2 Victoria & Upper Docks
- 3 Albert Basin
- 4 Telford Dock
- 5 Turning Basin
- 6 Dry Dock
- 7 Fishmarket
- 8 Offshore Supply Base
- 9 Fuel Storage and Distribution
- 10 Northern Isles Ferry Terminal
- 11 Harbour Office
- 12 Ro-Ro Berth

Organisational Structure

The Board

Overall responsibility for strategic planning and the environment rests with a Board of 3 executive and 9 non-executive members.

In line with the requirements of the *Trust Ports Guide to Good Governance* Members of the Board provide a broad spectrum of relevant experience and skills in securing the future of the port in line with strategic objectives.

Officials

There are four departments: Engineering, Operations, Property and Finance. Each Department Head reports to the Chief Executive and is responsible for implementing policy, procedures and ensuring the activities of their department are legally compliant. The Chief Executive and the Directors of Engineering and Operations are also executive members of the Board.

Staff

All employees are responsible for working within the aims of the Board's environmental policy. Role specific responsibilities are highlighted in job descriptions, briefing sessions and procedures.

Environment Unit

An interdepartmental working group of staff at all levels of the organisation has been created to act as a forum for debate - generating ideas, responding to specific issues and spreading awareness.

Environmental Advisor

The Board employs a full-time Environmental Advisor responsible for driving changes that will improve the port's environmental performance.



A diverse environment

Once an inlet of sand and shingle the Dee estuary has, over hundreds of years, been altered by the demands and pressures of a growing port and city. The modern harbour, a focal point of transportation and industry, continues to place pressure on this environment by influencing land use and water and air quality.

These pages explain some of the key components of our natural surroundings. However, there is more to the local environment than natural characteristics - the port is surrounded by a thriving city with people living, shopping, working and relaxing in close proximity to the operational areas.

Air Quality Management Area (AQMA)

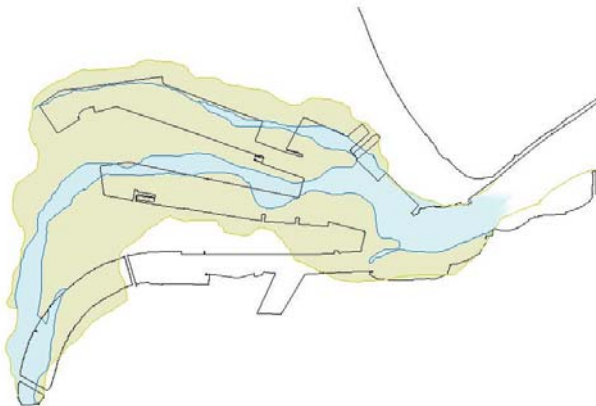
In 2001 Aberdeen City Council predicted that nitrogen dioxide levels could exceed EU limits in certain parts of the city centre and declared an AQMA that includes several major roads including two adjacent to the harbour: Market Street and Virginia Street. The Board has recently completed an air quality monitoring project in the port and continues to liaise with the council on this issue.

Water Framework Directive (WFD)

The WFD establishes a new system for the protection, improvement and sustainable use of the European water environment. An early part of implementing the directive has been to characterise every body of water in Scotland. Two of these are of particular importance to the harbour: the *Dee (Aberdeen) Estuary*, a body of transitional water encompassing the harbour area, and the *Den Burn*, a culverted burn that enters the harbour underneath Upper Quay.

Both are classified as 'heavily modified' and subject to the effects of diffuse and point source pollution. It is anticipated that heavily modified water bodies will require a 'program of measures' (expected to be published in 2009) to enable them to achieve the WFD objective of 'good ecological potential' by 2015.

See the 'Catchment Management Plan' box for more information.



An approximate plan of the Dee estuary in 1800 with the current harbour outline overlaid.

The first planned efforts to modify the shape of the river channel began in 1607 using piers to encourage scour - making the force of the river to do the work. The first dredger began work in 1812 allowing the channels and basins of the modern port to be built.



Once an inlet of sand and shingle the Dee estuary has, over hundreds of years, been altered by the demands and pressures of a growing port and city.



Special Area of Conservation

The River Dee SAC was approved in March 2005. It is part of a network of ecologically significant European sites that are protected in order to conserve certain habitats and species. There are three important species found on the River Dee:

Atlantic Salmon

The Dee contributes about 4 or 5 percent of all salmon caught in Scotland. These migratory animals pass through the port on their way to and from the river.

Otter

Surveys indicate that a strong, healthy population of Otters is present throughout the Dee catchment.

Freshwater Pearl Mussel

Freshwater Pearl Mussels are found 6 kilometres and further upstream from the port.

Catchment Management Plan

There are advanced preparations for implementing a catchment management plan (CMP) to support the effective running of the Dee SAC. The CMP incorporates a number of proposed actions to deliver improvements in water and habitat quality.

The WFD also focuses on managing the water environment on a catchment basis - ensuring local solutions are developed in response to local pressures.

The Board has liaised with representatives from SNH and SEPA to produce an action plan for the harbour area and believes that this, as well as supporting the SAC, also represents a proactive approach to the implementation of the WFD 'program of measures'.

Key issues

The Port Environmental Review System requires that the Harbour compiles a register of the way its operations affect the environment. The register must include the environmental impact of each 'aspect' and an assessment of its significance. These pages highlight the most significant aspects of Aberdeen Harbour's operations.

Prioritising the impacts in this way allows the Board to identify and focus on those of greatest concern. The procedure for assessment and determination of environmental impacts is currently under review. The aim of the review is to better reflect the fact that many activities occurring in the harbour may be outwith the direct control of the Board.

As a result of the review it is anticipated that issues such as TBT will become less significant (due to a reduction ship repair facilities) while issues like oil spills and ships waste remain priorities and other issues, like air quality, receive new focus.



Dredging

Dredging is carried out in order to remove sediment deposited by the Dee and tides and preserve depths suitable for safe navigation. Impacts associated with this activity result from the effects of resuspending and removing the deposited material on organisms living in the water column or the sediment itself.

Around 140,000m³ of sediment is dredged from the port each year. After ensuring that man-made debris is removed the remaining sand, silts, gravel and stones are deposited at sea, a process that is subject to annual licensing. A Best Practicable Environmental Option appraisal forms part of the licensing process and FRS analyses samples of the sediment to ensure that it meets certain chemical standards.



Tributyl-Tin

Paint containing tributyl-tin (TBT) has been used as an effective antifouling agent on ship's hulls for many years. Now being phased out, the formulation of TBT paint means harmful environmental effects remain even when the vessel is recoated in TBT free paint.

This is of particular concern at maintenance facilities where hull washing could dislodge TBT contaminated paintwork. The operation of the Pontoon Dock, which had been modified to prevent the escape of TBT contaminated waste, and the work carried out there was regulated by SEPA's PPC regime and subject to regular spot checks.

Data from the monitoring project confirms that TBT levels in sediment around the pontoon reduced during the life of the PPC permit. The pontoon dock was decommissioned in late 2004 and removed.



Oil Spills

The effects of a serious hydrocarbon spill on plant and animal life are well publicised. Contingency plans to deal with an event like this are in place and the Board maintains a 24hr emergency response agreement with an environmental clean-up contractor.

Of greater concern is the frequency that small spills occur, typically when vessels are loading or transferring fuel oils. It is the Board's policy that any incident is investigated by the Harbour Police and in many cases the company responsible is reported for prosecution. The fines for causing these spills have been as large as £70,000.

Analysis of the reported information shows that, since 1998, the majority of spills occur as a result of carelessness (such as overflows and loose connections) when a vessel is taking on fuel or transferring it between on-board tanks.

The Board has written to local shipping companies, charterers, agents and fuel suppliers to draw their attention to this information and believes the frequency of spills can be reduced if strict procedural controls during bunkering are introduced.



Ships Waste

As well as handling the waste generated by its own activities; the Harbour is required to ensure facilities are available for the disposal of all types of waste produced by visiting ships.

The Board currently engages a contractor to manage 19 quayside skips placed in fixed locations. In order to best reduce the incentive for a vessel to dump waste at sea these skips are free-at-point-of-use (the cost is recovered via harbour dues). As vessels shift around the port during their visit this system also ensures skips are available at all times.

Waste management at Aberdeen is highly competitive and, although the Board provides facilities, many users choose to employ and pay a contractor directly - in full accordance with the 'polluter pays' principle.

Legislation governing the facilities for receiving ships waste is becoming increasingly complex and harbour users, regulatory bodies and other stakeholders are regularly consulted about the services provided. The aim of this dialogue is to identify waste management solutions as laws becomes increasingly prescriptive and costs rise.

Managing our obligations

The Board recognises its environmental responsibilities and is committed to improving the environmental performance of the port.

The first three points of the Environmental Policy (page 3) refer to the implementation of an environmental management framework based on the cycle of plan, do, check and act. Aberdeen Harbour's framework has been certified as compliant with the ECOPORTS PERS standard, which incorporates many of the components of ISO14001 and EMAS. Last year the port began to monitor the continuous improvement of its environmental management system using another ECOPORTS developed tool, the Self Diagnosis Methodology.

The Board is an active member of the British Ports Association's Environmental Group. At the twice-yearly meetings environmental specialists from ports across the UK share knowledge, experience and discuss pressing environmental issues.

A number of further initiatives have also been carried out. These include reintroducing native tree species to the banks of the River Dee, collecting paper for recycling, abolishing plastic hot drink cups from head office and introducing recycled paper for photocopying and publications. Current development works at the harbour make use of crushed demolition rubble and recycled steel. The steel was delivered by sea, saving as many as 70 HGV trips from Luxembourg.

The Board also supports events such as the Aberdeen Green City Fun Day and has hosted talks and tours for organisations like North East Scotland Biodiversity, local members of the Institute of Environmental Management and Assessment and SEPA.

Environmental Monitoring

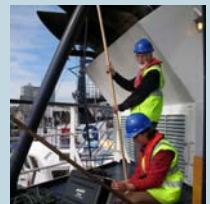
For more than five years, an environmental study has been carried out in partnership with the University of Aberdeen.

The initial focus of the study was a series of twice-yearly sediment samples. The first takes place just before the dredging campaign and the second six months later. Parameters measured include heavy metals, hydrocarbons and TBT.

Chemical analysis in isolation does not give a complete picture of the impact of pollution so several other studies, including investigations of the sub-lethal impacts of pollution and surveys of foreshore biodiversity, also take place.

Air quality measurements, including levels of nitrogen dioxide, sulphur dioxides and particulates, have also been taken. Aberdeen City Council also monitors the AQMA and the Board liaises and cooperates fully with this important project.

A key element of the study has been the development of close links with the University of Aberdeen - providing valuable hands on experience and research subjects for students. The incorporation of new research directions, e.g. water quality, is already being planned.



Our objectives for 2005

The following targets and objectives were set by the Environment Unit in January. These challenges were developed by staff to contribute to improved environmental performance during 2005.

OBJECTIVE	TARGET	DATE
OBJ1 Resource Efficiency Improve the resource efficiency of the Board by focusing on a number of key areas e.g. electricity consumption.	1. Investigate building use patterns and lighting systems to reduce wasted energy.	Jul 05
	2. Investigate electricity consumption of harbour plant at Atlantic, Matthews and Waterloo Quays.	Jul 05
	3. Improve insulation at 16 Regent Quay	Dec 05
	4. Review number and cost of publications to eliminate wasted stock. Investigate electronic publishing.	Feb 05
OBJ2 Improve Awareness Improve stakeholder and community awareness of the port, its environmental impact and the activities undertaken to improve performance.	1. Install infoboards to distribute port information e.g. at Pocrá Quay area.	Dec 05
	2. Liaise with Maritime Museum regarding the AHB Gallery	Dec 05
	3. Develop leaflet to highlight the port environment, local conditions and AHB's environmental activities.	May 05
	4. Publish a twice-yearly environmental newsletter.	Sep 05
OBJ3 Environmental Management Improve the quality and effectiveness of the environmental management system.	1. Evaluate and subscribe to legislation update and awareness service.	Dec 05
	2. Integrate water quality study with existing project and develop long term strategy for monitoring.	Dec 05
	3. Complete review of aspect register and significance assessment methodology. Develop new management objectives and action plans in line with the review.	Sep 05
OBJ4 Biodiversity Improve biodiversity within the port.	1. Implement a biodiversity enhancement project e.g. restoring native species.	Dec 05
	2. Organise a beach clean-up during the summer period.	Sep 05



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