



SEVENTH FRAMEWORK PROGRAMME
THEME 6: Environment (including Climate Change)



**Adaptive strategies to Mitigate the Impacts of Climate Change on
European Freshwater Ecosystems**

This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 244121
Duration: February 1st, 2010 – January 31st, 2014

**Deliverable 7.5.3: Popular articles for stakeholder
consumption - A leaflet summarising the consultation at a
stakeholder workshop was held in Dunecht, Aberdeenshire**

Lead contractor: **JHI**

Due date of deliverable: **Month 24**

Actual submission date: **Month 28**

Work package: 7

Estimated person months: 1

Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)
Dissemination Level (add X to PU, PP, RE or CO)

PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

ABSTRACT

As part of REFRESH efforts to 'ground-truth' its economic analysis a stakeholder workshop was held in Dunecht, Aberdeenshire, in September 2012, to gather local stakeholder views on how (dis)proportional and (un)evenly distributed the costs of measures to improve water quality are in relation to the benefits they provide in the Loch of Skene and Leuchar Burn sub-catchments in Scotland. Wider benefits of these measures beyond the water environment were also identified, through a participatory approach implemented via break-out groups and plenary discussions. This workshop builds up on the previous stakeholder engagement process undertaken in this area as part of REFRESH on the collaborative scoping of solutions for water quality.

This deliverable comprises a leaflet summarising the consultation

Dunecht workshop 3 February 2012

Scientists from the James Hutton Institute hosted a workshop that brought together 12 local stakeholders including policy makers, regulators, farmers and practitioners, to discuss measures to improve water quality in the Loch of Skene and Leuchar Burn area.

Participants included representatives from the Scottish Environment Protection Agency (SEPA), Dunecht Estate, Aberdeenshire Council, the Royal Society for the Protection of Birds (RSPB), Loch of Skene Access Group, farmers, and the Dee Catchment Partnership Project Officer.

Participants carried out three main tasks:

1. identify water quality problems in the sub-catchment and the sources of these pressures,
2. consider what actions would alleviate these problems, and the cost-effectiveness of such measures,
3. discuss predicted future climate changes, their impact on water quality, and possible actions to help mitigate impact and adapt to new conditions.

This leaflet summarizes the views of workshop participants. A full report is available to download from www.theriverdee.org.

Workshop participants (Jaff's Bar, Dunecht, 3 Feb 2012).



REFRESH: Adaptive Strategies to Mitigate the Impacts of Climate Change on European Freshwater Ecosystems

The activity reported here is part of a research project in which James Hutton Institute (JHI) scientists are working together with 24 European research partners on the European Union funded REFRESH Project. REFRESH is helping to design cost-effective strategies to ensure freshwaters comply with the EU Water Framework and Habitats Directives, and investigating adaptation measures to account for future climate change.

The REFRESH project is particularly concerned with identifying possible measures to improve water quality through collaboration with local stakeholders to ensure that solutions are locally adapted. The Dunecht workshop was a key aspect of this engagement in the UK and is part of the broader strategic research programme of JHI in collaboration with the Scottish Government and through membership of the Dee Catchment Partnership. Similar workshops have been carried out in England, Finland, Norway, Greece and the Czech Republic.



The James Hutton Institute is one of the Scottish Government's main research providers in environmental, crop and food science.



The REFRESH Project on Adaptive strategies to Mitigate the Impacts of Climate Change on European Freshwater Ecosystems is a EU funded project from the Seventh Framework Program.



The Dee Catchment Partnership is a voluntary association of agencies, organisations and individuals working together to ensure the long-term, sustainable management of the River Dee catchment.

How can we improve water quality in the Loch of Skene and Leuchar Burn?

Sharing local knowledge and views

Dunecht REFRESH workshop summary 3 February 2012



Workshop findings

1. What are the main problems?

Workshop participants felt that the **major water-related problems** in the sub-catchment are:

- excessive nutrients (eutrophication) and algal blooms in Loch of Skene,
- poor water quality in streams caused by diffuse pollution,
- impediments to migratory salmonids.

They felt that the **main sources of these problems** are:

- inorganic fertilizers and animal manure,
- effluent from waste water treatment works,
- forestry,
- organic matter on the loch bed,
- weirs/dams,
- septic tanks,
- out-wintering of cattle/sheep in inappropriate locations,
- watering of stock from streams,
- recent and fast-growing housing developments and ground sealing in the area, with developments planned in the next 10 -15 years expected to add to this pressure,
- sediment runoff from the quarry.

Participants recognised that geese numbers are increasing, but were not certain whether this is contributing to water pollution in the Loch of Skene, as this has not been measured.



2. What measures can be used to address these problems?

Workshop participants suggested 23 measures that can be applied locally to address water quality problems.

Of these, it was agreed that the most cost-effective locally would be:

- improving septic tank management,
- creating buffer strips.

Increasing capacity for manure storage and increasing public transport (to reduce road run off) were thought to be costly with small effects.

Stakeholders disagreed about cost-effectiveness of certain measures (for example, improved management of commercial run-off and nutrient management).

An important result of the workshop is that the cost-effectiveness of several measures is unclear and more knowledge is needed. These include: contour ploughing, alternative water treatments (biodiscs), reducing household wastewater production, removing sediment from the stream bed, creating riparian woodlands, improving field drainage, re-meandering and control of migratory birds.

Farmers thought that some measures (such as limiting grazing periods and reducing stocking) could become cost-effective at the farm level if supported by subsidies.

It was also noted that the cost-effectiveness of some measures (e.g. dam/weir removal, re-meandering and alternative water treatments) depends on the scale at which they are applied.

3. What are the expected impacts of climate change?

Participants agreed with scientific predictions for this area of:

- warmer wetter winters and wetter springs,
- cooler rather than hotter summers,
- more frequent storm events, leading to more frequent and extreme flood events,
- higher temperatures (these could allow increased arable production and might extend grazing periods and reduce needs for in-wintering of cattle).

However, scientific predictions of drier summers for this particular area were not convincing to participants.

Overall, climate change was expected to impact adversely on water quality.

However, a very important point made by farmers was that climate change impacts on production were seen as much less important than EU CAP reform. CAP reform was seen as the most important driver of future changes in agriculture.

Leuchar Burn and Loch of Skene catchment area

© Crown copyright and database right (2012).
All rights reserved. The James Hutton Institute, Ordnance Survey Licence Number 100019294

