



Co-funded by the Eco-innovation
Initiative of the European Union

Grant Agreement: ECO/12/332862

SI2.657673

CLEANLEACH

Treatment of nursery leachates by combining slow sand filtration and horizontal subsurface flow
constructed wetlands

CIP-EIP-Eco-Innovation-2012

Project Coordinator: Institut de Recerca i Tecnologia Agroalimentàries (IRTA)

D 6.16 Workshops & Exhibitions (II):

Lead beneficiary: SALIX

Due date of deliverable: 9th May 2015 (Month 19)

Final submission date: 4th August 2015 (Month 21)

Start date of project: 10 October 2013

Duration: 30 months

Project co-funded by the Eco-innovation Initiative of the European Union		
Dissemination Level D 6.16		
PU	Public	<input checked="" type="checkbox"/>
CO	Confidential, only for members of the consortium (including the Commission Services)	<input type="checkbox"/>

1. Salix Wetlands Workshop: general description



As part of Salix's two day Wetlands Conference (7-8 July 2015), Cleanleach partners Salix and Naturalea led a Cleanleach workshop on 7 July 2015 at Salix's Croxton Park Nursery, near Thetford in Norfolk.

Around 60 people - including landscape architects, ecologists, academics, consultants and engineers from wetland and river-related businesses - attended the Cleanleach project presentation and demonstration.

2. Presentations

The first presentation was given by Albert Sorolla of Naturalea, who outlined the environmental problems arising from nutrient pollution from intensive agriculture and horticulture.

Albert went on to explain the objective and features of the Cleanleach technological solution, the demonstration project which Naturalea has set up on Spain and the potential applications for the new system.

David Holland, Technical Director for Salix, then described the Cleanleach demonstration project which Salix has set up at Croxton Park and how it differs from the Naturalea one.



He explained that rainwater is collected from the nursery's polytunnels and then stored in tanks. This water, which contains leaves and other organic matter from nearby trees, is cleaned by the Cleanleach system and then recycled back into tanks to then irrigate pot grown plants.

One big difference with the Salix project is that water is filtered through sand mixed with Xylit fibres to provide structure – whereas in Spain just sand is used. Xylit is a waste product from brown coal mining in Germany, with very high water absorption qualities and high surface area for micro-biology activity.

Another difference is that the UK project has both a horizontal subsurface-flow constructed wetland, and a floating wetland using a 'BioHaven' element. The BioHaven offers a more concentrated effect – land is relatively expensive and restricted in the UK, but the BioHaven aims to deliver the same treatment as the gravel element over a smaller area, because more water can be stored and the retention time could be decreased.

The plant species used in both wetland systems include *Phragmites australis*, *Carex acutiformis*, *Iris pseudacorus* and *Lythrum salicaria*.

David then went on to describe different potential waste water treatment applications for the system.

Albert then outlined the latest phase of research where they are studying how different plants species perform in the system at the Urban River Lab outdoor experimental laboratory set up in Montornès del Vallès (Barcelona, Spain). Here 18 channels of 12m in length are planted with different plant species and 12 constructed wetlands divided between four steel tanks, where the circulating water is obtained from the effluent of the waste water treatment plant.

Delegates were then taken to see the Salix Cleanleach demonstration project for themselves, where David Holland explained the components of the system and how it works, including the use of a by-product of local whisky production (instead of the Spanish beer by-product used by Naturalea), to provide the carbon source required by microbes to remove nitrates and transform them in N₂ in the constructed wetlands.

The presentations and demonstration led to a number of questions from attendees and discussion about potential applications for the system.

Youtube video link to extract of the presentation:

https://www.youtube.com/watch?v=ojBsae4KB_E&feature=youtu.be

3. Impact & conclusions



The Workshop introduced the Cleanleach technology to a broad range of wetland and water course managers in the UK and showed them the potential to take the principles of the system and adapt it for their own environments.

Workshop delegates were asked to complete a feedback form, which included a Cleanleach question: “Could the Cleanleach wastewater treatment system potentially help your business/project more sustainable?”

Thirty per cent of respondents indicated that Cleanleach could help their businesses and projects become more sustainable, including delegates from the Broads Authority, London Borough of Enfield, Defra, Suffolk County Council and the Environment Agency.

4. Promoting the Workshop



The workshop was promoted on Salix's website:

<http://www.salixrw.com/news/wetland-management-course/>

The event was also promoted to specialist media and coverage was secured in:

- EA On Site, 4 June 2015 – Managing Wetlands, Rivers & Sediments Workshop
<http://www.eaonsite.com/k2-categories/events/managing-wetlands-rivers-sediments-workshop>
- Dredging Today, 3 June 2015 – Salix to Host Wetland Management Course
<http://www.dredgingtoday.com/2015/06/03/salix-to-host-wetland-management-course/>

And via a series of e-shots issued by Salix and the event partners, frog environmental and cbec eco-engineering, with a total reach of over 7,600 contacts. These contacts include water consultants from all market sectors, including horticulture and waste water treatment businesses, as well as clients and project managers from local and national government departments, navigation authorities, rail and utility companies and environment-related charitable trusts.



Co-funded by the Eco-innovation
Initiative of the European Union

Screen shot of e-mail issued to Salix database of 6,000 contacts:

Salix



Wetland, River & Sediment Management Course

Thetford, Norfolk. 7-8 July 2015

Salix is hosting a two-day Practical Wetland, River & Sediment Management Course at its Oxtoun Park Nursery, near Thetford in Norfolk, 7-8 July 2015 with support from frog environmental and cbec eco-engineering UK Ltd.

The event will include a nursery tour and extensive practical demonstrations as well as presentations from major wetland and river enhancement project managers.

The cost of the course is £75 for one day, £125 for two.

Lunch included.

A three course evening meal with drinks (£30) & accommodation can be arranged at an extra cost.

Deadline for responses – 21 June.

[Apply For Booking](#)

Day One 7th July - River and Wetland Management

Dr Ian Dodkins, SEACAMS at Swansea University – The Function and Design of Floating Treatment Wetlands

Albert Sorolla, Naturalea & David Holland, Salix – Cleanleach Wetland Treatment Project

David Naismith, Wildfowl and Wetland Trust – A Practical Application of Treatment Wetlands

David Mooney, London Wildlife Trust – Woodberry Wetland Restoration, an Urban Nature Reserve

Richard Haine, frog environmental – BioHaven Floating Wetlands

Nursery Tour, River & Wetland Management Products and Demonstrations

Emily Long, Norfolk Rivers Trust – Restoring Natural Process to Enhance and Restore Norfolk's Chalk Streams

Dr Hamish Moir, cbec eco-engineering UK Ltd – The Use of Woody Debris in River Restoration

Dr Ruth Callaway, SEACAMS at Swansea University – Invertebrate and Vegetation Colonisation of Rock Pools and Molluscs in the Freshwater and Marine Environment Study Results

Day Two 8th July - Managing Sediments in a Catchment

Ian Morrissey of Atkins – Developing the Olympic Park Wetlands

Dr Volker Seidel, Ockon – The Use of Xylit, An Innovative Waste Fibre in Erosion Control and Water Quality

David Holland, Salix – River Bank Stabilisation Techniques

Richard Edwards, Salix – Establishing Vegetation on Poor Soils and Slopes with HydraGX

Richard Haine & Leela O'Dea, frog environmental – Clearflow: No Silt, An Accelerated Sediment Removal Technology

Clearflow Sediment Management and Erosion Control Product Demonstrations

Dr Hamish Moir, cbec eco-engineering UK Ltd – Sustainable Urban Drainage at East Tullis Burn

Leela O'Dea, frog environmental – BioClear Ponds: An Innovative and Integrated SuDS Approach



Share Tweet Forward LinkedIn +1