

# **Report on a Collaborative StreamScapes / Leave No Trace / LAWPRO Community Engagement Project in Balla, County Mayo**



*StreamScapes Engagement with Schools & Communities stresses 'hands-on' Field Trip; these indelible experiences assist in achieving life-long behavioural changes, resulting in minimising our impacts upon local Water Quality & Biodiversity*

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***“The Schools engagements are designed to increase awareness on river corridor ecology and water quality; help reconnect communities with their river catchments, and to discuss and promote ‘best practice’ across a wide range of activities to assist in securing sustainability for rural communities”***

***– Bernie O’Flaherty, LAWPRO***

***“In encouraging and hosting this Project we were attempting to create a greater awareness in the Balla community about how we impact upon water quality and all which that effects; the Project was a wonderful experience for all involved and it has created converations about these issues right through the community...Balla NS Principle Alma Egan wants it for every class, every year!”***

***- Pat Boyle, Balla Tidy Towns***

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**Appreciation is expressed to:**

**Bernie O’Flaherty & Mick Kane, LAWPRO**

**Maura Lyons, Eithne Larkin, & Georgia MacMillan, Leave No Trace Ireland**

**Pat Boyle, Balla Tidy Towns**

**Stephanie O’Toole & Jessica Mason, StreamScapes Staff**

**The Teachers, Principals and Students of Balla NS & Balla Secondary School**

**And special thanks to LAWPRO/DHPLG for funding this Project**

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## **Executive Summary**

This is the Report of a Catchment-based Aquatic Education initiative, in support of Water Framework Directive implementation, which was produced by LAWPRO, Leave No Trace Ireland, and the StreamScapes Unit of Coomhola Salmon Trust. The project engaged with students of Balla, County Mayo, in the upper River Moy Catchment. The Project was funded by LAWPRO and the Department of Housing, Planning, & Local Government.

Engagements included Field Trip experience...this element of the engagements is to ensure that participants see first-hand the wealth of biodiversity that is dependent upon high status water quality, and to understand how our behaviours impact upon this.

The Schools' engagement actions promoted enthusiastic participation and learning.

With prior encouragement of LAWCO, the Project furthermore served as a Pilot joint training venture between Leave No Trace Ireland and the StreamScapes Programme with a view to increasing Catchment-based Aquatic & Biodiversity engagement education capacity in County Mayo and further afield.

## 1. Introduction & Background

This is the Report of a Catchment-based Aquatic Education initiative, in support of Water Framework Directive implementation, which was produced by Local Authorities Waters Programme (LAWPRO), Leave No Trace Ireland, and StreamScapes.

Primary Project delivery agent was Coomhola Salmon Trust, Ltd., a not-for-profit Environmental NGO based in Bantry, Co. Cork; producers of the 'StreamScapes' Aquatic & Biodiversity Education Programme, working in conjunction with Leave No Trace Ireland. The award-winning 'StreamScapes' programme has been utilised in the Republic and in Northern Ireland by Government Departments and Local Authorities within the context of wider efforts to raise awareness of Aquatic and Biodiversity issues with particular reference to the Water Framework Directive.

The Water Framework Directive (2000/60/EC), in "establishing a framework for Community action in the field of water policy," indicates provision for "educational projects" (Annex VI, Part B, xv) to support the wider objectives of achieving good status ground and surface waters.

The rationale behind this provision is based on the fact that a community which has the benefit of an improved awareness of the water-cycle (and its capacity for supporting human socio-economy together with a wider biodiversity), together with knowledge of best-practice principles (to minimise anthropogenic impacts), will be in an enhanced position to assist in realising the objectives of the Water Framework Directive, both in terms of water quality as well as water conservation issues; the empowering of a community with these skills will achieve wide and manifold benefits across all sectors.

Innovative and compelling education methods are required to promote awareness of aquatic and biodiversity assets, as well as a sense of resource stewardship, amongst citizens. This Project utilised the **StreamScapes** method which combines classroom-based lessons with, where practical, field experience, enabling participating students and adults to become familiar with the wonders of **local** aquatic and biodiversity assets, and how 'best-practice' can lessen our impacts upon them.

All too often, when people think of 'the Environment', they think of somewhere else...the Amazon, or African savannah...

StreamScapes *engagement* is all about getting people to focus on *their own locality* and the Aquatic & Biodiversity resources which are in their midst; which is influenced by our everyday actions in support of our pursuit of livelihood, recreation, and domestic management. When people are made aware of 'best-practice', it increases their capacity to become voluntary & conscious stewards of local natural resources.

Participants are engaged in lessons which are made indelible by the StreamScapes approach, resulting in behavioural change which has long-lasting impacts.

## **2. Project Participants & Reports**

### **Participant's Overview**

Schools and adult groups, as micro-communities, make for 'ready-made' venues for engagement on water quality issues. Generally speaking, primary students are far and away the most enthusiastic participants as they particularly love the Field Trip aspect of the sessions and this creates a platform for deep, indelible learning. Both of the Balla, County Mayo participating schools were extremely willing participants in the project; the Feedback reports (Section 3) reveal this commitment to participation.

What is clear from feedback is that those who do participate, of every age group, are startled to learn of the wealth, complexity, and interdependence of aquatic and terrestrial life forms in our midst and how we may impact, for better or worse, upon them. Projects over the years have demonstrated that no participant ever forgets taking part in a StreamScapes experience, and that participation lays the basis for behavioural change thereby assisting in wide aspirations to redress water quality and biodiversity issues.

### **Participants**

**(Schools' Reports follow; also see Section 3 for completed Schools' Feedback Forms)**

- **Balla National School**
- **Balla Secondary School**
- **Supported by Balla Tidy Towns (Pat Boyle, Chair)**

### **Reports**

**(WED 6 MAR): Balla National School; Alma Egan, Principal 087 288 1735 / 094 936 5280**

**[ballanationalschool@gmail.com](mailto:ballanationalschool@gmail.com)**

**Participating Teacher: Miss Sweeney (27 pupils)**

The class was a well engaged group of 6th class National School students who had a good general environmental knowledge; the school had completed all the Green Flags and this was evident in their responses to the opening questions which establish baseline awareness. The initial in-class session discussed Catchments, Food Webs, and Health & Safety in advance of the visit to the nearby Rodney River which was in walking distance from Balla. A specially prepared Power Point presentation of the upper Moy and the Balla area was also shown.

For the Field Trip, Mick Kane of LAWPRO demonstrated kick sampling (stream too high and fast-flowing for children to go in) to gather invertebrate samples from the Rodney River, and he also brought samples from the high-status (eroding) Bunahowna Stream (outside Mulranny, in the Burrishoole Catchment in the west of the County) for comparison.

Though the students were unable to get into the river due to the depth, the comparative samples were set up for them on tables beside the river bank to enable analysis. The two samples available allowed students to compare the local water quality with the Bunahowna sample, to learn of how status of rivers may differ.

Students worked in teams and compared samples from both streams, and quickly achieved proficiency in using the identification keys and discussing adaptations. We also demonstrated the use of litmus paper to determine pH, which was 6.5 for the Rodney River.

Part of the focus was the adaptations that creatures make to survive in their habitat. Based on the aquatic invert census from both the Rodney and the Bunahowna, the students determined by consensus that the water quality of the Rodney River was Q3.85, and the Bunahowna was Q4.4.

Invertebrates found in the Rodney River:

Freshwater shrimp (very abundant)

Swimming mayfly nymphs

Cased Caddis (3 species)

Uncased Caddis

Freshwater hog lice

Black fly larva

We discussed the reasons for the predominance of shrimp and decided it was because of the amount of dead plant matter in the river. Georgia MacMillan of Leave No Trace also facilitated a Woodland Walk in the local Balla Community Neighbour-wood to introduce woodland ecology. After lunch we did a local food web and discussed what positive actions (*'Best-practice!'*) could be taken by everyone to minimise our impacts upon local Water Quality and Biodiversity. The students were very keen to do a follow-up field trip and teachers have agreed to use the 'Heritage In Schools' scheme to do a field trip in the summer.

(THU 7 MAR): Balla Secondary School; Miriam Cooney, TY Coordinator; 087 952 7196

[miriamcooney@ballasecschool.com](mailto:miriamcooney@ballasecschool.com)

The opening classroom session was used as a refresher in the water cycle and then introduced the idea of catchment areas and impacts within them, and a dedicated Balla/Upper Moy Power Point tailored for Transition Year consumption. We also covered bio-monitoring and water quality.

As with the previous day and the National School, the river was still in flood so they were given samples to analyse on the river bank to make an assessment of water quality. They participated well in all activities and showed a good level of engagement. As well as the Leave no Trace activities Jessica Mason of StreamScapes ran a drama session with them using newspaper articles from which they had to do a freeze frame 'still' to illustrate what the article was about. The subjects of the articles included; a fish kill in co. Mayo; planting trees to reduce flooding; EU fines for Ireland's levels of water pollution and the impact of climate change on Ireland's rainfall. Back at school we brainstormed actions and projects that they could do as a follow on to the day, and their science teacher was very keen to carry on with the work from the day.

#### Resources:

Both schools were supplied with Leave No Trace literature and sufficient copies of StreamScapes publications (PDF's of which are attached to this Report) including:

- StreamScapes Bunúsach/Basic (for Primary Students)
- StreamScapes X-Stream (Advanced, for Secondary Students)
- StreamScapes Múinteoir (for Teachers for purposes of follow-up lessons & projects)

### 3. Participants' Feedback Forms



#### StreamScapes Project – Balla, County Mayo Waters & Wildlife Workshops

##### Feedback Form

School/Group name: 6th Class Balla N.S  
No. of pupils/participants attending workshops: 25 pupils  
Participating School Teacher name: ELAINE SWEENEY / PAUL de LACY  
School/Group Phone Number: 094 9365280  
Email address: elainesweeney23@gmail.com  
Date of workshop: 06/03/2019

*Please comment on the workshops with regards to preparation, organisation, interaction, lessons, etc:*

Very enjoyable workshops. Enthusiastic and knowledgeable leaders. The 'field trip' element was particularly interesting and all pupils were fully engaged. A very educational day – Thank You.

*Any suggestions to improve Workshops?*

*Many thanks for taking the time to complete this feedback form!*

For further information please contact:

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[streamscapes@eircom.net](mailto:streamscapes@eircom.net) [www.streamscapes.ie](http://www.streamscapes.ie)

*We like to see any photos or project work which you have done...please email them to us!*



An Roinn Tithíochta, Pleanála agus Rialtais Áitiúil  
Department of Housing, Planning and Local Government



Many thanks to Pat Boyle, Balla Tidy Towns;  
Balla National School; Balla Secondary School;  
Mick Kane & Bernie O'Flaherty, LAWPRO;  
Eithne Larkin, Leave No Trace Ireland



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**StreamScapes Project – Balla, County Mayo**  
Waters & Wildlife Workshops

**Feedback Form**

School/Group name: Balla Secondary School  
No. of pupils/participants attending workshops: 18  
Participating School Teacher name: M Conroy  
School/Group Phone Number: 093 94 65082  
Email address: micheleconroy@ballasecschool.com  
Date of workshop: 07/03/19

*Please comment on the workshops with regards to preparation, organisation, interaction, lessons, etc:*

Well prepared. Introduced well. When we got to the site everything was set up well. Instruction was clear and much was learned. Students interacted well and did a lot of the identifying of species themselves. It also encompassed environment protection as well as biodiversity and brought it all together well.

*Any suggestions to improve Workshops?*

**Many thanks for taking the time to complete this feedback form!**

For further information please contact:

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**We like to see any photos or project work which you have done...please email them to us!**



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Department of Housing, Planning and Local Government



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Eithne Larkin, Leave No Trace Ireland



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## StreamScapes Project – Balla, County Mayo

Waters & Wildlife Workshops

### Feedback Form

School/Group name: Balla Secondary School  
No. of pupils/participants attending workshops: 18  
Participating School Teacher name: Gareth O'Donnell  
School/Group Phone Number: .....  
Email address: gareth.odonnell@ballaschool.com  
Date of workshop: 7/3/19

*Please comment on the workshops with regards to preparation, organisation, interaction, lessons, etc:*

Good organisation and structure to day  
Tutors / leaders were engaging  
Variety of activities for students

*Any suggestions to improve Workshops?*

Even more activities for students if possible!

*Many thanks for taking the time to complete this feedback form!*

For further information please contact:

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Balla National School; Balla Secondary School;  
Mick Kane & Bernie O'Flaherty, LAWPRO;  
Eithne Larkin, Leave No Trace Ireland



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# National School Students' Comments

I never knew  
that there was  
that much insects  
in the water.

I will pick up  
litter whenever I  
see it on the  
ground.

I learned its not just  
fish thats in the water

The river Rodney is three  
or four in polution

Use less blech and  
disinfectants

all the wildlife  
in the River

I learned that there is  
more life in the rivers  
than I expected.

I will not use as much  
plastic or anything that  
might be a threat to  
Biodiversity -

I learnt about  
all the creatures  
in our river.

170 litres of water-per  
person per day

Frogs Paths  
Farms Church  
cows Shops  
Cars Playground  
Buss estates  
Factory's  
Schools  
Roads

Use less Bleach  
and cleaning  
products

there is bugs  
in  
water

1) That theres loads of  
wild-life right beside  
us that I didn't know  
about

2) No more littering

deaths that <sup>there</sup> is more  
just fish is the  
river / lakes

The river in balla is  
called the river  
Rodney

Don't run the tap while  
your brushing your teeth

There are a lot of case  
caddis flies in balla

Recycle More.

Jeremie

That so many  
insects live in  
rivers

That there are loads of  
caddis flies in  
Bella

I will recycle more at  
home

1) Glass Bottle never  
breaks down.

2) Don't buy products  
with micro-beads.



#### 4. Project Photo Gallery

**Classroom sessions address introduction to the Water Cycle, Biodiversity, and the Catchment concept, followed by Field Trip to understand local Water Quality**





*Students learn how the insects found in their river indicate 'Q' value or (local!) water quality..*





**Project Facilitators: Commendation**



***Coomhola Salmon Trust wish to thank the Project Facilitators (from left): Stephanie O'Toole, StreamScapes; Georgia MacMillan, Leave No Trace; Jessica Mason, StreamScapes; Eithne Larkin, Leave No Trace; Bernie O'Flaherty & Mick Kane, LAWPRO; Pat Boyle & Joe Vaughan, Balla Tidy Towns***

## **Appendix 1: Course Content**

StreamScapes engagement with Balla Schools' participants explored the following topics:

### **1. Theory Session**

- Introduction to the Water Cycle
- Requirement for clean water; cost of provision of water & sewage treatment
- Introduction to the Catchment concept
- Consideration of the demographics and land-use of the Catchment
- The significance of aquatic flora and fauna
- Best practice in the home and garden; at work and recreation

### **2. Field Session (or Virtual Field Trip when impractical)**

- Wildlife observation: Discussion of Habitats & Species
- Aquatic Macro-invertebrate ID and water quality indication
- Participants' determination of local water quality ('Q values')
- What do we do that can impact on water quality? (Discussion)
- What can we do to conserve and enhance our Catchment's aquatic resource? (open)

## **Appendix 2: Project Publications**

Leave No Trace literature and StreamScapes publications were utilised in support of the Project, including:

- StreamScapes Bunúsach (for primary school students)
- StreamScapes X-Stream (for secondary students and adults)
- StreamScapes Múinteoir (a Teacher's Guide to assist in follow-up lessons in the post-Project phase for schools)
- 2x Locally-tailored PowerPoint presentations (for primary & secondary schools)

PDF copies of these publications are attached