

# Leaving Certificate *Ecological Investigation: A study of a sand dune ecosystem*



*The outdoor classroom and real world learning are used throughout this course to 'make Science real' and enhance student's personal and social development. Students investigate the awe inspiring environments and habitats to aid their learning about the world around them, other people and themselves.*

**FSC**

BRINGING  
ENVIRONMENTAL  
UNDERSTANDING TO ALL

Please visit

[www.field-studies-council.org/outdoorclassroom/ireland/leavingcertificatebiology.aspx](http://www.field-studies-council.org/outdoorclassroom/ireland/leavingcertificatebiology.aspx)  
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## OVERVIEW

This course prepares students for **Sub-Unit 1.4: An introduction to the general principles of ecology** and **Sub-unit 1.5: A study of an ecosystem** of the syllabus.

During this day students will follow a route to enquiry to investigate biotic and abiotic factors on a sand dune. Students will be introduced to a range of quantitative observational techniques which will develop the skills of data collection, identification of organisms and data analysis and presentation. The day visit includes a study of an ecosystem and all five mandatory experiments.

This course of study takes place at Bunduff Strand sand dunes - an actively pro grading system made up of three dune ridges interspersed with dune slacks, blowouts and backed by managed grassland. The sand dunes and beach overlook Donegal Bay and are backed by the Dartry Mountains. Journey time is approximately 35 minutes from the centre. Students will be expected to walk about 500m along the beach and across the dunes.

Equipment and booking sheets will be supplied to measure soil, slope, wind, temperature and vegetation characteristics at the sand dunes. A series of parallel transects will be run from the strand line to the plagio climax grassland at the back of the dune system. There will be sufficient stations sampled to enable statistical analysis, scatter graphs and kite diagrams.

## COURSE LENGTH

**Sessions from 9.30am-4.00pm**

9:30am- 1:00pm	1:00pm -1:30pm	1:30pm-4:00pm	4:00pm
Morning session	Lunch	Afternoon session	Depart

Extensions can be arranged, including evening meals and an overnight stay. This makes more time available for follow up discussions and analysis; ensuring students make the most of this outdoor learning opportunity.



### External Recognition of Quality

All our centres have been awarded the Quality Badge by The Council for Learning Outside the Classroom. The badge is awarded to organisations that have demonstrated that they consistently deliver high quality teaching and learning experiences and manage risk effectively. This means that you will have to complete less paperwork when visiting our centres.

**COURSE CONTENT**

- Ecosystem
- Psammosere
- Biotic, Abiotic
- Adaptation
- Blow out
- Biosphere
- Climatic factors
- Edaphic factors
- Aquatic environmental factors
- Pollution
- Conservation

*Optional higher level extension:*

- *Competition*
- *Predation*
- *Parasitism*
- *Symbiosis*

**LEARNING OUTCOMES**

Learning Objectives	Learning Outcomes
<ul style="list-style-type: none"> <li>• Provide students with the opportunity to observe, identify and measure a range of abiotic and biotic characteristics</li> <li>• Provide students with an understanding of the processes of change and succession</li> <li>• Explore the impact of humans management regimes</li> </ul>	<p><b>By the end of a course we expect all students to:</b></p> <ul style="list-style-type: none"> <li>• Have gained an understanding of succession both spatially and over time.</li> <li>• Recognise that the sand dunes area is sensitive to human impact yet has a recreational function</li> <li>• Be familiar with a range of fieldwork techniques</li> </ul> <p><b>We also hope that students will:</b></p> <ul style="list-style-type: none"> <li>• Recognise both positive and negative human impact on the area</li> <li>• Understand that a range of biotic and abiotic factors will impact on the structure and function on the ecosystem</li> <li>• Have an understanding of the effectiveness of existing and potential management strategies</li> <li>• Recognise that the ecosystem is a small part of a much wider biome.</li> </ul>

Protecting fieldwork opportunities for everybody

Growing pressures on outdoor learning has led the FSC to take on an important role; championing the rights and opportunities for people of all ages to experience the environment at first hand.

The FSC has lead in campaigns to reverse the continuing decline in fieldwork within secondary schools and to build opportunities for out-of-classroom learning.

As a registered charity, the FSC receives no statutory funding. It relies solely on fees charged for courses and membership. Therefore, by visiting an FSC Centre not only are you receiving a high quality educational experience for your students, you are also you are helping to protect fieldwork opportunities for everybody.

**NATIONAL CURRICULUM LINKS:**

- 1.4.1 Ecology
- 1.4.2 Ecosystem
- 1.4.3 Biosphere
- 1.4.4 Habitat
- 1.4.5 Environmental factors
- 1.4.6 Energy flow
- 1.4.7 Niche
- 1.4.8 Nutrient recycling
- 1.4.9 Human impact on an ecosystem
- 1.5.1 Overview of an ecosystem
- 1.5.2 Observation and scientific study of an ecosystem
- 1.5.3 Organism distribution
- 1.5.4 Choice of habitat
- 1.5.5 Organism adaptations
- 1.5.6 Organism role in energy transfer
- 1.5.7 Analysis

*Optional higher level extension:**H.1.4.10 Pyramid of numbers**H1.4.11 Ecological relationships**H.1.4.12 Population Dynamics***High Quality teaching**

The teacher delivering the content plays a vital role in ensuring successful learning outcomes are achieved.

This is why every FSC Centre has taken great care in developing a qualified team of highly trained and CRB checked field teachers working full time, all year round.

Not only are they experts, they are gifted teachers with a real passion for the subject being taught. FSC field teachers are the reason why many schools return year after year.

## FSC DERRYGONNELLY

Located in the unspoilt West Fermanagh countryside, FSC Derrygonnelly is 10 miles from Enniskillen, 20 miles from Ballyshannon and only 15 miles from the Donegal coast. The River Sillees runs through the Centre grounds and an excellent variety of habitats including rocky shores, freshwater, sand dunes, rivers, bog and heathland are within easy reach.

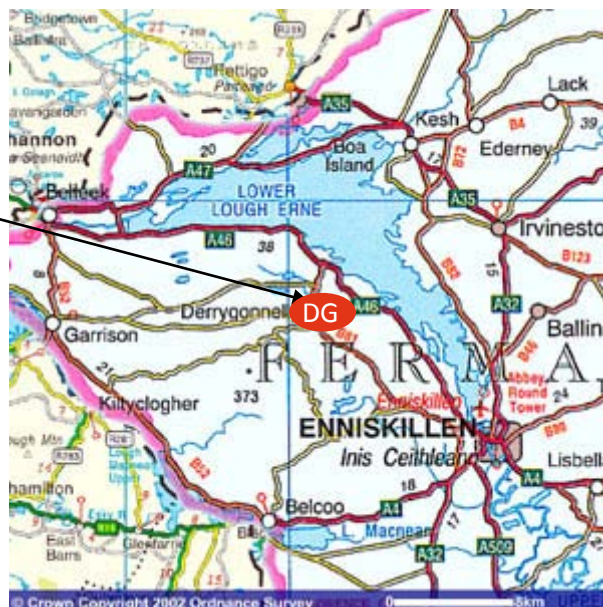


DG

**Derrygonnelly**

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## PRICES

Prices start at €21/£17 per student. For more information please contact the centre directly.

## TO BOOK THIS COURSE, SIMPLY:

1. Choose the time of the year you would like to attend
2. [Check availability online](#) or contact FSC Derrygonnelly

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for alternative Leaving Certificate courses

The FSC prides itself on being flexible; the course content can be tailored to meet your needs. Alternatively, we can work with you to create a fully bespoke course to meet your exact requirements.

FSC offers a number of courses covering [biology field trips](#), [biology fieldwork](#), [Leaving Certificate biology](#), as well as [geography fieldwork](#). Please visit our website for further information.