Enabling Scientists with the Government of Jersey and Earthwatch

Name of Earthwatch's key environmental focus Creating Thriving Places to Live and Work Climate Change Biodiversity Loss	**Lead contact details:** Nina Cornish n.cornish@gov.je Environment Manager – Biodiversity Natural Environment Land Resource Management Howard Davis Farm	**Second lead contact details:** Tina Hull t.hull@gov.je Environment Officer – Biodiversity Natural Environment Land Resource Management Howard Davis Farm
Project title	Investigate the benefits of flowering conservation cover crops for native insect pollinators	

Aims & Objectives

Pollination services are essential to produce most of our fruit, vegetable and nut crops including apples, tomatoes, and pumpkins. Although much of the world's primary staple crops are wind pollinated (e.g., corn, rice, wheat), a third of the food we eat every day can be attributed directly to pollinators. Agricultural landscapes can present many threats to native insect pollinator communities. Such threats include destruction or fragmentation of natural habitat and the food and nesting resources, as well as exposure to agricultural pesticides. However, there are many conservation strategies that can be employed across farms and gardens to help maintain healthy insect populations.

A conservation strategy such as sowing conservation cover crops is commonly used by the agricultural industry. Cover crops are grown primarily for the purpose of 'protecting or improving' between periods of regular crop production and can contribute to sustainable crop production through several mechanisms including increasing soil nutrient and water retention, improving soil structure/quality, reducing the risk of soil erosion, surface run-off and diffuse pollution by providing soil cover and by managing weeds or soil-borne pests as well as enhancing biodiversity.

With reports of dramatic losses of insects occurring across the globe, and concern about what this means for wider biodiversity and ecosystem health, there has never been a more important time to document evidence of change in populations of pollinating insects. This project is to assist the Pollinator Projec.JE in determining if flowering conservation covering crops provide benefits to insect pollinators. This project will evaluate and provide evidence if flowering conservation cover crops have a positive effect on Jersey's native pollinators. The project specifically focuses on pollinating insects, and they may include many different species of insects such as hoverflies, beetles, flies, butterflies and moths.

The main objectives are as follows:

- Create a flower ID guide for most seen flowering conservation cover crops.
- Carry out a literature review on the benefits to conservation cover crops to biodiversity.
- Carry out the PoMS FIT Count Surveys methodology on flowering conservation cover crop species and compare them against other native flowering plant species Jersey.
- Carry out pollard transects on difference types conservation cover crops counting the number of insects encountered grouping them under leptodorid, bees, hoverflies, bugs and beetles.
- Create a report summarising and interpreting the results of both surveys in Jersey with recommendation on different flowering cover crops.

- Work with Jersey Royal Company Ltd, on access to sites and provide results from surveys and resources to the farming industry.

Project description

In 2019 several organisations and interested parties came together, in partnership, to bring the Pollinator Project.JE to Jersey. This project is to assist the Pollinator Project.JE in further developing their monitoring objectives to look at the benefits flowering conservation cover crops can provide for Jersey's native pollinator populations.

This project will be run in partnership with the Jersey Royal Company Ltd www.jerseyroyal.co.uk. All produce grown and marketed by The Jersey Royal Company adheres to strict criteria outlined in its own environmental management policy which is based on the ISO14001 standard. Their environmental aim is to grow in a sustainable manner, and the company has several initiatives that minimise environmental impacts and specifically relating to this project - Wildlife and landscape conservation and enhancement. All fields and land parcels will be provided by them for each. You will be led by Simon Hammond who will provide field numbers, locations, and conservation crop details.

The UK Pollinator Monitoring and Research Partnership UK Pollinator Monitoring Scheme | UK Centre for Ecology & Hydrology (ceh.ac.uk) is currently running a monitoring scheme for England, Scotland and Wales. Jersey is participating and using their protocols and methodologies. We have designed our own ID guides suitable and appropriate for Jersey

The project has 2 key areas of surveillance:

1. carry out Flower Timed Insect (FIT) Counts FIT Counts: help us monitor pollinators | PoMS (ukpoms.org.uk) – carry out a ten minutes survey to sit and watch insects and flowers. This simple survey collects data on the total number of insects that visit a particular flower. FIT Counts can be done anywhere, including gardens and parks, in warm, dry weather any time from April to September. You will be required to carry out minimum of 30 fit counts over different types of flowering conservation cover crops.
2. carry out pollard transects Methods for recording butterfly transects | UKBMS - The Pollard walk is a fixed route, walked each week from 1st April till end of September, 26 weeks, providing suitable weather conditions are met during the middle hours of the day (10:45-15:45). Counting takes place within a 5m by 5m cube immediately in front of the walker. You will be required to carry out several transects on different types of flowering conservation cover crops.

The methodology for this project will be provided by the Land Resource Management team, with support available to the intern if needed. Interns will become familiar with ecological survey techniques and collecting evidence as part of this project will help inform both the Pollinator Project.JE and farming community (Jersey Royal Company Ltd) on the benefits of conservation cover crops in Jersey to native insect pollinators. These activities will be coupled with ongoing links with the wider research community to facilitate use of the data in research, conservation, and survey planning, and deliver a sustainable Jersey Pollinator Monitoring Scheme under the Jersey Biodiversity Partnership (JBP).

Link to policy

Multilateral environmental agreements ('MEAs') Jersey is committed to ensuring long term sustainable protection of its natural environment and biodiversity. Some of these international commitments include providing adequate protection to specific groups of species and species (e.g., CBD, Berne Convention, Bonn Convention and related Protocols and Agreements) Biodiversity Strategy for Jersey - The selection of Natural SSIs is based on scientific criteria which are explained in this strategy. These criteria are used to decide whether an area of land is of special interest. By providing evidence of visitor pressure at two SSIs, this project will help inform the ongoing management of SSIs to allow species to be continually protected.
Economic Framework for the Rural Environment 2022: provide a clear structure within which Government interventions are directed in a manner which is accountable, measured, valued and reported; and contributes fully to the delivery of a vibrant and sustainable rural sector, providing employment and economic opportunity, enhancing our natural capital and maintaining rural life as an integral and valued part of the Island's cultural identity.
Common Strategic Policy 2023 to 2026 Environment We will preserve our natural heritage and move towards a zero waste, circular economy. We will improve biodiversity, water, air and soil quality, and will continue our drive to reduce carbon emissions in line with our Carbon Neutral Roadmap. Future Jersey Vision: An Island loved for its beautiful coast and countryside, rich heritage, diverse wildlife and clean air, land, and water. An Island where a sense of community really matters - a safe place to grow up and enjoy life. An Island that offers everyone the opportunity to contribute to, and share in, the success of a strong, sustainable economy.
Government Plan 2023 to 2026 Climate Emergency Fund The delivery and resources plan within the roadmap apportions funds for all the policies around sustainable heating and transport, wider emissions and addressing the biodiversity crisis and protecting wildlife and habitats.
Delivery Plans 2023 Projects and Programme MENV P2.4 Better protecting biodiversity through new legislation and planning policies; exploring the introduction of biodiversity net gain; progressing a biodiversity strategy to address biodiversity loss.

Additional Funding

This Earthwatch Internship project meets part of the requirements set out in the approved proposition. A strategic outline business place is currently being drawn up to cost the project in its entirety. However, any additional funding for this project will be made available from Government of Jersey.

Duration

The project will commence Summer 2023 and will run for 8 weeks.

Any specific experience or skills required

The project is an 8-week Earthwatch Internship base in Jersey during the summer and includes access to the Earthwatch on-line Community Science Camp.

An interest in entomology would be an advantage.

It would desirable if you had your own transport. It will be possible to claim mileage.

Community Benefits/Customer(s)

1. Government of Jersey: The information gathered during the surveys will directly feed into the Government of Jersey species protection policy and monitoring programme, enabling the department to make evidence-based decisions on how we move forward with monitoring pollinators in the future.

2. Island community: The results obtained by this research will be used by the GOJ and other key stakeholders to produce informative materials for education and awareness campaigns, helping raise the profile of the importance of pollinators and the Pollinator Project JE conservation aims and efforts.
3. Enabling individuals: Support new scientists who are on the path of becoming conservation scientists with a passion for and expertise in engagement, who need further support on their journey. Investing in emerging scientists now will help secure a generation of connected, inspired and inspiring individuals who see the value of field science to provide knowledge about the world around us.