

ESAI Postgraduate of the Year 2021- Highly Commended Katherine Burns

Katherine Burns is a PhD candidate at University College Dublin, funded by the Irish Research Council and EPA Government of Ireland Postgraduate Scholarship, the Eva Crane Trust, and the National University of Ireland, Galway. Her supervisor is Dr Dara Stanley, based in the School of Agriculture and Food Science and the Earth Institute. Katherine is originally from Maine, USA and graduated with a BA in Environmental Science from Wheaton College in Massachusetts, USA. Her PhD research aims to address key gaps in the current knowledge of the contributions and conservation of insect pollinators in Ireland.

Insect pollinators play a critical role in the maintenance of ecosystems and production of insect pollinated crops. However, there is mounting evidence that insect pollinator populations are in decline worldwide, which has significant implications for ecosystem function, crop production, and human health. In order to address gaps in the current knowledge of insect pollinator importance, decline, and conservation, Katherine's research investigated the contributions of insect pollinators to Irish crops, interactions between managed and wild bees in semi-natural areas, and the public perceptions of insect pollinators. This was achieved using a combination of field observations, field experiments, and public attitudes surveys. Her findings provide further evidence of the importance of pollinators for crop production, suggesting that managing wild pollinator populations in agroecosystems (particularly apple and bean production areas) has economic incentives. She also identified areas of future conservation focus, based on her findings indicating that managed honeybees and wild bumblebees may directly compete for floral resources in Irish heathlands. Finally, she highlighted the need to continue engaging the public in pollinator conservation initiatives, due to the public's potential lack of awareness of the importance of Ireland's non-bee pollinators (i.e. flies and wasps). Overall, the findings of her work have implications for public policy and pollinator management techniques both in Ireland and abroad.

Katherine has published her research in journals such as the *Journal for Nature Conservation and Agriculture, Ecosystems & Environment*, as well as presenting the findings of her work at numerous national and international conferences. She has also widely disseminated her work through national television, print, and online media, including RTE's EcoEye television program. Her research has also been featured on the Museum of Science, Boston (USA) podcast, "Pulsar". Additionally, Katherine is very active in the science communication and

engagement world, having participated in events such as PubhD Galway, Soapbox Science Dublin, and Bright Club, and served on the planning committee of Galway's 2019 Pint of Science event. In April 2020, she competed and placed 3rd in the national science communication event, FameLab Ireland.

Katherine currently works in the USA at the Rhode Island Department of Environmental Management (Division of Fish & Wildlife) as a pollinator entomologist.