



**Trinity College Dublin**

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

# Engaging Policy through Citizen Science and Science Communication

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[JosephRoche.ie/EssentialSkills](http://JosephRoche.ie/EssentialSkills)

**1. Citizen science projects actively involve citizens in scientific endeavour that generates new knowledge or understanding.**

Citizens may act as contributors, collaborators, or as project leader and have a meaningful role in the project.

**2. Citizen science projects have a genuine science outcome.**

For example, answering a research question or informing conservation action, management decisions or environmental policy.

**3. Both the professional scientists and the citizen scientists benefit from taking part.**

Benefits may include the publication of research outputs, learning opportunities, personal enjoyment, social benefits, satisfaction through contributing to scientific evidence e.g. to address local, national and international issues, and through that, the potential to influence policy.



# What to call people involved in citizen science projects?

**professional scientists**

I just got involved somehow but it is not my principal job.



**credentialed scientists**

You know, I never finished my degree back then.



**academic scientists**

Sounds like we have no experience of the real world.



**citizens**

Another thing in which I cannot participate.



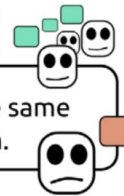
**hobbyists/amateurs**

I've actually worked in this field longer than you.



**community members**

I don't hold the same values as them.



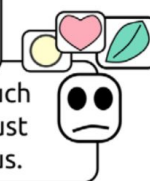
**volunteers**

What is my worth? Am I only free labour?



**indigenous people**

This is so much more than just science for us.



**human sensors**

I'm not a robot ... yet.





## Citizen Science in Ireland

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Ireland has a rich history of public engagement with science and the growing number of national citizen science initiatives is in keeping with developments seen in other European countries. This paper explores several aspects of citizen science in Ireland, in order to assess its development and to better understand potential opportunities for the field. An introduction to the roots of citizen science in Ireland's past, from the first methodical observations of natural phenomena carried out at monastic settlements up to present day projects monitoring environmental change and biodiversity, is presented along with an overview of the current national citizen science projects running in the country. This cataloging of contemporary citizen science will be compared to the awareness of citizen science in the Irish education system at primary, post-primary, and university level. These measures of progress will be considered in the changing context of international citizen science funding and available support, such as the European Citizen Science Association and the EU-Citizen.Science platform. Citizen science in Ireland is at a critical point. If citizen science is embraced as a truly social and participatory innovation, Ireland has the chance to not only dramatically improve its citizen science output, but to also become a model of best practice for countries at similar stages of citizen science development.

**Keywords:** citizen science, Ireland, education, citizen scientist, public engagement, science communication, science and society, informal learning

### PUBLIC ENGAGEMENT WITH SCIENCE IN IRELAND

Citizen science refers to scientific research that involves people who do not identify as professional scientists. It can also refer to a theoretical or practical approach to research as well as being a field of research in its own right (Roche et al., 2020a). While the theoretical context of the individual terms "citizen" and "science" can vary greatly depending on a range of factors and circumstances (Elrod et al., 2017), citizen science can provide a general indicator of a country's relationship between science and society. Public perceptions of science in Ireland are worth exploring at several key historical junctures. Taking stock of this history of engaging with science provides context for the current state of citizen science in the country and indicates potential future directions for the field.

### Monastic Observers and Early Natural Philosophers

Ireland is home to one of the earliest and most significant historical sites for scientific observations. The Newgrange megalithic passage tomb near the River Boyne in Meath predates both Stonehenge and the Egyptian Pyramids and is considered to be "the oldest megalithic structure known for certain to have an astronomical function" (Ray, 1989, p. 344). Long before the term "science" existed, natural philosophers in Ireland were making systematic observations of the natural world around them. One of the first records of scientific writing in Ireland is from an unknown philosopher nicknamed "Augustinus Hibernicus," who carried out astute observations of the Irish

**TABLE 2 |** Citizen science projects in Ireland in 2020.

| Project name                                      | Host organisation   | Study subject                         | Website link  |
|---|---|---------------------------------------|---|
| All Ireland CoastWatch Survey                     | CoastWatch Europe   | Coastal wildlife and fauna            | <a href="http://coastwatch.org/europe/survey/all-ireland-survey">http://coastwatch.org/europe/survey/all-ireland-survey</a>   |
| All Ireland Ladybird Survey                       | Fota Wildlife Park and University College Cork                              | Ladybirds                             | <a href="http://www.biology.ie/home.php?m=ladybirds2">http://www.biology.ie/home.php?m=ladybirds2</a>   |
| Backyard Biodiversity Species                     | National Biodiversity Data Centre   | Garden wildlife species               | <a href="https://www.biodiversityireland.ie/projects/additional-survey-schemes/backyard-biodiversity-species">https://www.biodiversityireland.ie/projects/additional-survey-schemes/backyard-biodiversity-species</a>                   |
| Bat Monitoring and Distribution Projects          | Bat Conservation Ireland  | Bats                                  | <a href="https://www.batconservationireland.org/what-we-do/monitoring-distribution-projects">https://www.batconservationireland.org/what-we-do/monitoring-distribution-projects</a>   |
| Big Beach Biodiversity Survey                     | National Biodiversity Data Centre and Environmental Protection Agency       | Tidal marine species                  | <a href="https://explore.yourhome.ie/shore-surveys/the-big-beach-biodiversity-survey">https://explore.yourhome.ie/shore-surveys/the-big-beach-biodiversity-survey</a>   |
| Big Jellyfish Hunt                                | National Biodiversity Data Centre and University College Cork               | Jellyfish                             | <a href="https://explore.yourhome.ie/marine-biodiversity-surveys/the-big-jellyfish-hunt">https://explore.yourhome.ie/marine-biodiversity-surveys/the-big-jellyfish-hunt</a>   |
| Bumblebee Monitoring Scheme                       | National Biodiversity Data Centre   | Bumblebees                            | <a href="https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/bumblebee-monitoring-scheme">https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/bumblebee-monitoring-scheme</a>               |
| Hop to the National Frog Survey                   | Irish Peatland Conservation Council   | Frogs, tadpoles, and frogspawn        | <a href="http://www.pcc.ie/help-pcc-hop-to-8-national-frog-survey-irelandcard">http://www.pcc.ie/help-pcc-hop-to-8-national-frog-survey-irelandcard</a>   |
| Clean Coasts Programme                            | An Taisce   | Coastal environments                  | <a href="https://cleancoasts.org/our-initiatives/clean-coasts-volunteering">https://cleancoasts.org/our-initiatives/clean-coasts-volunteering</a>   |
| Dragonfly Ireland 2019-2024                       | National Biodiversity Data Centre   | Dragonflies                           | <a href="https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/dragonfly-ireland-2019-2024">https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/dragonfly-ireland-2019-2024</a>               |
| Farmer's Waste Calendar: Climate Tracker          | National Biodiversity Data Centre   | Weather, climate, and wildlife        | <a href="https://www.biodiversityireland.ie/projects/additional-survey-schemes/farmers-waste-calendar-climate-tracker">https://www.biodiversityireland.ie/projects/additional-survey-schemes/farmers-waste-calendar-climate-tracker</a> |
| Flower Insect Trined Court (FIT Court)            | National Biodiversity Data Centre   | Flower-visiting insects               | <a href="https://pollinators.ie/section/pollinators/fit-court">https://pollinators.ie/section/pollinators/fit-court</a>   |
| GLUEBie Air Quality Campaign                      | An Taisce   | Air quality                           | <a href="https://www.gluebie.gov.ie/web/ireland/home/overview-of-air-quality-campaign">https://www.gluebie.gov.ie/web/ireland/home/overview-of-air-quality-campaign</a>   |
| Invasive Species Irish Basking Shark Project      | National Biodiversity Data Centre   | Invasive species                      | <a href="https://www.biodiversityireland.ie/projects/invasive-species">https://www.biodiversityireland.ie/projects/invasive-species</a>   |
| Irish Butterfly Atlas 2021                        | Irish Whale and Dolphin Group   | Basking sharks                        | <a href="https://explore.yourhome.ie/marine-biodiversity-surveys/irish-basking-shark-project">https://explore.yourhome.ie/marine-biodiversity-surveys/irish-basking-shark-project</a>   |
| Irish Butterfly Monitoring Scheme                 | National Biodiversity Data Centre   | Butterflies                           | <a href="https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/butterfly">https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/butterfly</a>   |
| Irish Garden Bird Survey                          | BirdWatch Ireland   | Butterflies                           | <a href="https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/butterfly-monitoring-scheme">https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/butterfly-monitoring-scheme</a>               |
| Irish Hedgehog Survey                             | National University of Ireland Galway and National Biodiversity Data Centre | Garden birds                          | <a href="https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey">https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey</a>                           |
| I-WETS  | BirdWatch Ireland   | Hedgehogs                             | <a href="https://www.irishhedgehogsurvey.com">https://www.irishhedgehogsurvey.com</a>   |
| Kelpies   | National University of Ireland Galway                                       | Wetland birds                         | <a href="https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey">https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey</a>                         |
| Ladybird Atlas 2025                               | National Biodiversity Data Centre   | Kelps                                 | <a href="https://explore.yourhome.ie/marine-biodiversity-surveys/kelpies">https://explore.yourhome.ie/marine-biodiversity-surveys/kelpies</a>   |
| Leaf Miners                                       | National Biodiversity Data Centre   | Ladybirds                             | <a href="https://www.biodiversityireland.ie/projects/additional-survey-schemes/leafminer-survey">https://www.biodiversityireland.ie/projects/additional-survey-schemes/leafminer-survey</a>   |
| LDAR Public Feature Identification                | Geological Survey Ireland   | Leaf mining fauna                     | <a href="https://www.ldar.ie/what-we-do/citizen-science/national-replicate-survey">https://www.ldar.ie/what-we-do/citizen-science/national-replicate-survey</a>   |
| Local Authority Waters Programme                  | Local Authority Waters Programme  | Karst                                 | <a href="https://www.dmrp.ie/comm/arcgis/apps/webappviewer/index?appid=b7c74c0e76396407ba698b8c1572c95">https://www.dmrp.ie/comm/arcgis/apps/webappviewer/index?appid=b7c74c0e76396407ba698b8c1572c95</a>                               |
| National Vegetation Database                      | National Biodiversity Data Centre   | Waterways                             | <a href="http://water.ie/communities/vegetation">http://water.ie/communities/vegetation</a>   |
| National Replicate Survey (ORCA Ireland)          | Irish Wildlife Trust  | Vegetation                            | <a href="https://www.biodiversityireland.ie/projects/national-vegetation-database">https://www.biodiversityireland.ie/projects/national-vegetation-database</a>   |
| Peatlands Ireland People for Bees Project Lapping | Irish Wildlife Trust  | Terrestrial reptiles                  | <a href="https://irwt.ie/what-we-do/citizen-science/national-replicate-survey">https://irwt.ie/what-we-do/citizen-science/national-replicate-survey</a>   |
| Purse Search Ireland PECONNECT                    | Irish Wildlife Trust  | Marine megafauna                      | <a href="https://www.oceanandland.ie/CitizenScience">https://www.oceanandland.ie/CitizenScience</a>   |
| Rocky Shore Safari                                | BirdWatch Ireland and National Biodiversity Data Centre                     | Grass                                 | <a href="https://pasturebase.ie/agric">https://pasturebase.ie/agric</a>   |
| Seasearch Ireland                                 | Marine Dimensions   | Bees                                  | <a href="https://irwt.ie/people-for-bees">https://irwt.ie/people-for-bees</a>   |
| Seashore Snapshots Survey                         | BirdWatch Ireland and National Biodiversity Data Centre                     | Lapping                               | <a href="https://birdwatchireland.ie/our-work/surveys-research/research-surveys/project-lapping">https://birdwatchireland.ie/our-work/surveys-research/research-surveys/project-lapping</a>   |
|   | Environmental Protection Agency   | Mermaids' purses                      | <a href="https://marinedimensions.ie/purse-search-ireland">https://marinedimensions.ie/purse-search-ireland</a>   |
|   | National Biodiversity Data Centre and Environmental Protection Agency       | Irish rivers                          | <a href="https://www.ucd.ie/peconnect">https://www.ucd.ie/peconnect</a>   |
|   |   | Seaweeds and intertidal invertebrates | <a href="https://explore.yourhome.ie/shore-surveys/rocky-shore-safari">https://explore.yourhome.ie/shore-surveys/rocky-shore-safari</a>   |
|   |   | Inshore marine biodiversity           | <a href="https://seasearchireland.ie">https://seasearchireland.ie</a>   |
|   |   | Barnacles and limpets                 | <a href="https://explore.yourhome.ie/shore-surveys/seashore-snapshots">https://explore.yourhome.ie/shore-surveys/seashore-snapshots</a>   |

(Continued on following page)

National Biodiversity Data Centre, Irish Wildlife Trust, Environmental Protection Agency, An Taisce...

Universities/Schools

Researchers/Practitioners/Educators

UCD Citizen Science Community of Practice

Research Ireland (previously SFI/IRC)

European Projects

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# EU-Citizen.Science platform



- **Built during the EU-Citizen.Science project (2019-2021, H2020, Grant Agreement nr. 824580)**
- **Enhanced and enlarged with new tools, services and resources, and connected to other (national) citizen science infrastructure in the ECS project**
- **Built by and for the community – as a place to share knowledge, tools, training and resources for citizen science**
- **Bundles information on citizen science bringing together the results and outcomes of many citizen science projects**

# citizenscience.eu



As of April 16th 2026:

- 444 projects
- 273 resources
- 92 training resources
- 384 organisation profiles
- an events calendar and a blog
- platform/network and user profiles
- 5,270 registered users

The COALESCE project aims to develop, consolidate and mainstream generated knowledge and connections within science communication to establish a sustainable **European Competence Centre for Science Communication.**

**Duration:** April 2023 / March 2027

**Budget:** 3M €

**Partners:** 13 from 8 countries

- **Improve science–society relations** by increasing the transparency of science, building trust in the processes and outcomes of science & raising scientific literacy
- **Improve the uptake of science** by society and **support evidence–based policy making**
- Ensure **greater ability to react rapidly and effectively** to critical situations
- Becoming the **reference hub** for scicommers, researchers & others being widely used in their **daily practice**
- **Sharing best practices in scicomm becomes a regular activity** for all science communicators, researchers and journalists

# scicommcentre.e

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National & regional hubs are organisations across Europe, including COALESCE consortium partners, with an **excellent reputation in science communication** in their respective countries/regions.

Together, they form a network at the heart of COALESCE and serve as the **physical venues for COALESCE activities**.

