

Proposed Trinity Biodiversity Audit (TBA)

The proposed TBA will deliver:

1. Habitat inventory: an inventory of horticultural and natural habitats on the Trinity estate, classified according to Fossitt¹, and mapped using GIS.
2. Species list of plants and animals in each habitat type.
3. Data system for collating and presenting data, including a GIS-based interface for collecting data, and an interactive map for presenting data via the TCD website.

The project has been divided into three tasks, each task reflecting the three objectives above. The first and third tasks will be completed during 2021, but the second task requires a dedicated co-ordinator, and so we will be seeking funding to support that, and aim to deliver a full audit by the end of 2022.

Protocols will be developed and written up as guidance documents so that data can be added in the future in a relatively simple way. In addition, data from any student-led Bioblitz events can be added. Detail and outputs associated with each task are given below (Table 1).

The project requires resourcing, and *minimum* resource requirements are detailed in Table 2. These are based on input from an existing PhD candidate in Botany, student interns (funded by the Sustainability Fund), and a project coordinator for 6 months (April-October 2021).

Task	Detail	Output	Responsibility	Date for Completion
1. Habitat Inventory	Site visits will be conducted to assess indicator species to assign habitat classes to each habitat patch ² . Habitat features of potential value to protected fauna (identified in Task 2) will be noted.	Creation of digital GIS map of habitats.	Tony Williams	October 2021
2. Species lists	Specialised surveying methods and taxonomic expertise are required, and recording needs to be co-ordinated, and data archived appropriately. The first step is to develop and test formal protocols for each taxonomic group	Protocols for each taxonomic group	Co-ordinator	October 2021
Plants	All planted/horticultural species, and their locations on the site, will be determined in consultation with grounds staff. All habitats identified in task 1	Plant species lists per habitat type	Co-ordinator	October 2021

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<https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf>

² https://www.heritagecouncil.ie/content/files/best_practice_guidance_habitat_survey_mapping_onscreen_version_2011_8mb.pdf

	will be surveyed using quadrat sampling. Existing tree maps will be integrated.			
Fungi	Each habitat will be surveyed throughout the year	Species lists	Carla Harper	October 2022
Birds	Each habitat will be surveyed throughout the year, at least three times during winter/early spring and three during late spring/summer ³ .	Species lists stratified by habitat type. Species of conservation interest will be noted.	Nicola Marples/Dave Kelly? & volunteers	October 2022
Bats	Surveys of potential roosting sites, as well as dusk emergence and dawn swarming surveys will be conducted following established guidelines ⁴ .	Species lists stratified by habitat type. Species of conservation interest will be noted.	Aoibheann?	October 2022
Other mammals	Trail cameras will be deployed and non-lethal trapping will be conducted	Species list	Aoibheann/Collie?	October 2022
Amphibians and reptiles	Amphibians will be surveyed in spring ⁵ in the Stewards Garden Pond to establish if there is a breeding adult population. Surveying will continue through spring and summer, searching for tadpoles of both newts and frogs.	Species list	Collie	October 2022
Invertebrates	A range of methods will be employed in each habitat type to survey a range of invertebrate groups. Surveys need to be repeated on at least three separate occasions during the spring/summer to capture the range of invertebrates present. Surveys will include: <ul style="list-style-type: none"> a. Transect walks⁶ – for butterflies, bees, and hoverflies b. Pan-traps – for bees, hoverflies and other flower-visiting insects c. Light traps – for night-flying moths 	Species lists	Co-ordinator & volunteers	October 2022

³ <https://www.tandfonline.com/doi/pdf/10.1080/00063650709461460>

⁴ https://www.heritagecouncil.ie/content/files/bat_survey_guidelines_2008_11mb.pdf

⁵ http://www.narrs.org.uk/documents/Survey_protocols_for_the_British_herpetofauna.pdf

⁶ <https://www.ukbms.org/Methods>

	<p>d. Pitfall traps – for ground-active invertebrates including beetles, earwigs, spiders, myriapods etc.</p> <p>e. Beating/sweep netting – for vegetation-dwelling invertebrates</p>			
3. Data mapping system	A data system will be designed to collate habitat and species level data, and to display these data for the college community and public. The system will be set up such that it can be added to in future.	Online system for capturing and displaying data	Tony Williams	October 2021

Details	Source	Year	Amount
PhD student to complete habitat mapping and data system	Transport Infrastructure Ireland	2021-2022	€0 (existing PhD student contribution)
Taxonomic expertise	Trinity College Dublin	2020-2022	€0 (existing TCD staff)
Student intern(s) to assist with habitat mapping and data system	Trinity Sustainability Fund	2020 (postponed due to COVID)	€1,500
Student intern(s) to assist with species protocol development and testing	Trinity Sustainability Fund	2021 (subject to application)	€1,500
Coordinator to manage project, integrate team, collate protocols, pilot methods, collate data, oversee mapping system design for 6 months ⁷	? College/external funding ?	2020-2021	€ 17,435
TOTAL			€20,435

⁷ Based on IUA Research Assistant Point 1, €34,871 p.a.