RESEARCH PROJECT

Project title:	GOLF LANDSCAPES: Biodiversity and multifunctionality of golf landscapes
Project start date: 1 April 2023	**Project completion date:** 31 December2025
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Funding, kSEK

	2023	2024	2025	2026	Total
STERF	525	525	525		1575
NIBIO		100	100		
Total	**525**	**625**	**625**		**1775**

Project objectives

- To provide knowledge of how golf courses can be designed and managed to improve their contributions to biodiversity and multifunctionality at the landscape scale.
- To identify approaches to assess and document existing qualities and biodiversity potential, prioritise approaches and recommend methods to monitor development based on golf course potential and landscape context.
- To provide simple indicators of golf course contributions to landscape functions, to be used in design and management, such as connectivity, species pool, and structural and habitat diversity.
- To provide methods to estimate multifunctionality for the courses and landscapes.
- To prescribe principles of design to improve biodiversity and ecological functioning, the quality of golf course habitats for biodiversity and their contributions to biodiversity in the wider landscape while retaining playability and quality of the game.

Project summary and status January 2024

Golf courses are often established in highly fragmented and at least partly degraded landscapes, resulting in positive effects on biodiversity and ecosystem functions. However, there are few studies on ecological effects within and beyond golf courses.

In this project, landscape ecological analysis is being performed on 40 courses along an urbanisation gradient, in Munich (Germany), Manchester (UK), Stockholm (Sweden), Copenhagen (Denmark) and Oslo (Norway). Landscape analysis is based on mapped information to estimate landscape indicators

for biodiversity, such as size and shape of landscape elements, edge effects, landscape diversity and landscape heterogeneity based on land cover types. We are using methods to automate this for larger landscapes. Patterns within the golf courses will be related to the surrounding landscape, and results will be verified by fieldwork on a subset of the courses. This will provide knowledge of how golf courses can be designed and managed to improve their contributions to biodiversity and ecological functions at the landscape scale, also given the context dependence of each course. The main findings of the project will be disseminated to the golf industry through guidelines, workshops, and webinars.