



## GOLF COURSE BIODIVERSITY AND CARBON BENEFIT STUDY TO GET UNDERWAY



**This project aims to provide the golf course industry with a detailed and predictive understanding of the biodiversity value their urban green spaces provide**

The AGCSA, in conjunction with the University of Melbourne, is about to embark on a joint research project with the objective of improving the understanding of biodiversity conservation and carbon sequestration provided by urban green spaces, in particular golf courses.

Jointly funded by the Australian Research Centre for Urban Ecology (ARC) and the AGCSA, the two-year project due to get underway this spring, has four specific aims:

- To quantify the carbon stored and sequestered in the vegetation biomass and soils of urban golf courses according to management intensity, age and bioregion;
- To quantify the biodiversity benefit of urban golf courses in comparison to the adjacent residential urban areas according to age, bioregion and surrounding urban intensity;
- To combine indirect carbon costs of golf course management with direct carbon benefits to produce an overall 'carbon footprint' using life cycle assessment (LCA); and
- To develop, or apply, spatially-explicit models to predict the carbon and biodiversity benefit of

**As part of the biodiversity study, researchers will map those golf courses involved in the project and record flora species present**

urban golf courses, parks and gardens, and to validate their predictive capacity.

Nine golf courses throughout the greater Melbourne area have been selected to take part in the study ranging from newly established courses through to golf courses that have been on their existing site for more than 50 years. The study will focus on the following;

- **Bird biodiversity:** Researchers will visit each golf course 4-6 times a year to record birds observed based on sightings and song.
- **Mammal biodiversity:** For bats and frogs this will be based on the installation of recording devices for night-time activity (these will be placed in out of play areas). For larger mammals, researchers will visit the golf course at night on 4-6 occasions through the year to use spotlights.
- **Vegetation surveys:** Researchers will visit each golf course and walk the course with a GPS system to map and record species present.
- **Soil sampling:** The research team will collect soil samples from throughout the golf course. About 60 soil samples will be collected from wooded areas, roughs, fairways and greens.

"The Australian golfing industry recognises the significant threat that continued urbanisation holds for biodiversity," says AGCSATech environmental agronomist John Geary. "Golf courses provide an ideal research framework to investigate urban green space management providing an accessible and well documented network of urban green spaces across an age range and urban landscape."

This project aims to provide the golf course industry with a detailed and predictive understanding of the biodiversity value their urban green spaces provide. It will also provide the world's first comprehensive assessment of the net carbon costs and benefits from the management of golf course vegetation and soils through a detailed life cycle assessment in consultation with the industry. [↙](#)