



SDG 15 Life on Land

Overview

UQ supports the conservation, restoration, and sustainable use of terrestrial ecosystems through a whole-of-institution approach that integrates research, education, community engagement, and operational practice. Expertise is across a wide range of areas, in ecology, genetics and evolution, environmental management, animal and wildlife sciences, environmental policy and law, conservation decision making, regenerating ecosystems and sustainable agriculture.

Research at UQ advances ecological monitoring, threatened species recovery, habitat restoration, and conservation policy. UQ's research stations at Heron Island, Moreton Bay and Hidden Vale and the UQ-hosted Terrestrial Ecosystem Research Network (TERN) lead efforts to improve biodiversity outcomes through long-term ecosystem monitoring, restoration science, and innovative technologies for species detection and environmental management.

UQ offers diverse education outreach and public engagement opportunities that build awareness and capacity among students, communities, and industry, from lectures and seminars to field-based learning and collaborative projects. These initiatives promote sustainable land use across sectors such as agriculture, tourism, and forestry, while fostering inclusive partnerships with local communities, Traditional Owners, and conservation stakeholders.

UQ's operational commitments are reflected in its Environment and Sustainability Policy and the UQ Design Standards, which guide the sustainable management and development of the University's campuses and associated lands. Local biodiversity is embedded in planning and development processes through environmental management plans, native revegetation, pest control, and habitat enhancement activities.

Progress made in 2024 towards SDG 15 is reported here with reference to the following domains and enablers from UQ's Strategic Plan 2022-2025:

- Learning and student experience
- Research and innovation
- Enriching our communities
- Our global profile
- Our people.

Related SDGs

- [SDG 1 No poverty](#)
- [SDG 2 Zero hunger](#)
- [SDG 6 Clean water and sanitation](#)

- [SDG 7 Affordable and clean energy](#)
- [SDG 12 Responsible consumption and production](#)
- [SDG 13 Climate action](#)
- [SDG 14 Life below water](#).

Learning and student experience

UQ aspires to create positive global impact by inspiring a new generation of sustainability leaders who are equipped with both specialised and multidisciplinary skills and understanding in environmental sustainability.

Curriculum

UQ offers rich and varied educational experiences that equip students to be future leaders in fields that support progress towards SDG 15. UQ offered extensive educational opportunities throughout 2024, including:

- [Bachelor of Science](#) with majors or minors in Coastal and Ocean Science, Earth Science, Ecology and Conservation Biology, Environmental Science, Geographical Science, Marine Biology and Zoology
- [Bachelor of Environmental Management \(Honours\)](#), which enables students to develop and manage solutions to address global environmental challenges including in environmental science, ecology, conservation and sustainability. Courses include BIOL1030: Biodiversity and the Environment, GEOS1100: Environment and Society, ENVM2100: Foundations of Sustainable Development and ENV3103: Regulatory Frameworks for Environmental Management and Planning.
- [Bachelor of Wildlife Science](#), where students gain expertise including animal conservation and management
- [Bachelor of Agricultural Science](#), where student learning includes the scientific, technological, managerial, economic and social principles of agriculture to improve food security and environmental sustainability
- [Master of Business](#) program with a specialisation in [Organisational Sustainability](#) that includes a course on how businesses can create positive environmental and social impacts while also remaining financially sustainable.

Students benefit by complementing their class and laboratory-based learning with real world experiences at UQ's research stations at Heron Island and Moreton Bay, which continued to offer educational resources, programs and opportunities. In 2024, 1,336 UQ students (undergraduate and postgraduate) spent more than 4,000 days learning at these research stations, and the sites combined hosted 1,123 students from non-tertiary institutions (such as high schools), and 324 international visitors (including students from overseas institutions). The [Hidden Vale Research Station](#) was also used for student learning in 2024.

In addition, UQ is the only university in Australia to have bachelor, master and doctoral level programs in Tourism [certified by the United Nations World Tourism Organization \(UNWTO\)](#). The UNWTO promotes responsible, sustainable and universally accessible

tourism. This certification ensures high quality offerings for UQ students in relevant courses and programs. Examples include the UQ Business School's [Master of Tourism, Hotel and Event Management](#) program which includes a course on [Tourism in Developing Economies](#), and the [Bachelor of Tourism, Hospitality and Event Management](#) program which includes a core course on [Sustainability in Tourism, Hospitality and Events](#). It examines the potential positive and negative impacts of tourism, hospitality and events on communities, economies and the environment, and provides students with strategies to manage these based on the principles of sustainable development.

Research and innovation

Through a commitment to conducting discovery research and collaborating with partners, UQ seeks not only to create new knowledge but share it in ways that enrich and sustain the natural environment.

Land management and conservation

In 2024 UQ research addressed the conservation and sustainable management of terrestrial ecosystems including agricultural land, contributing to multiple SDG 15 targets:

- **The ARC Centre of Excellence for Plant Success in Nature and Agriculture** continued its broad program of research, led by its purpose to develop innovative tools and strategies to future-proof crops and native plant species. A 2024 highlight was the ARC Centre of Excellence for Plant Success Symposium on 17 June. This event facilitated cross-sectoral dialogue between researchers and scientists from academia and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency. Topics included genomic predication for varied environments, advanced water status measurements for field and lab, and how the Nagoya protocol affects plant research in Australia (contributing to SDG target 15.6 on the fair and equitable sharing of the benefits arising from the utilisation of genetic resources).
- **The Drought Resilient Soils and Landscaping (DRSL) project** collaborated with 20 farmers to trial innovative soil management strategies via a series of meetings, farmer-led demonstration sites, field trials and regionally tailored educational materials. Supported by the Australian Department of Agriculture, Fisheries and Forestry, this research aims to improve drought resilience by enhancing soil management knowledge, therefore contributing to the aims of SDG target 15.3 to restore degraded land and soil. Expected outcomes include increasing sustainable land management by minimising off-site impact such as runoff, erosion, nutrient loss and greenhouse gas emissions.
- **The TC Beirne School of Law 10th Frontiers in Environmental Law Colloquium** was held at UQ in February 2024. The event promoted cross-sectoral dialogue for SDG 15 by bringing together environmental law academics and practitioners to explore the theme "Looking forward and looking back: balancing environmental protection, conservation and restoration". With a focus on legal and interdisciplinary research, the event included presentations and collaborative discussions on climate and biodiversity crises, addressing diverse issues including ecological restoration, the

role of protected areas on public and private land, mechanisms to implement global biodiversity goals domestically, and the role of Indigenous Law.

Preserving ecosystems' biodiversity

Many of UQ's research projects and initiatives in 2024 focused on taking urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and protect and prevent the extinction of threatened species (SDG target 15.5):

- **The Terrestrial Ecosystem Research Network (TERN Australia)** delivered major advancements in ecosystem monitoring through its collaborative efforts to gather data and is directly supporting SDG 15. A UQ-led example is the [Threatened Species Index \(TSX\)](#), a vital data asset for tracking and reporting on changes in Australia's threatened and near-threatened species at national, state, and regional levels. The [2024 TSX](#) reveals overall trends. It shows that threatened species populations have shrunk by an average of 73% since 1985. The TSX covers plants, mammals and birds and continues to expand, integrating additional monitoring datasets from across the country each year. In 2024, pilot frog data were added. TSX is managed by the NCRIS-funded [TERN](#) at UQ, after being initiated by the Threatened Species Recovery Hub at UQ under a National Environmental Science Program (NESP) grant from the Department of Climate Change, Energy, the Environment and Water (DCCEEW).
- **A tool to monitor the Airborne eDNA of Threatened Species** was unveiled by researchers from the School of the Environment in July 2024. The non-invasive, cost-effective method captures airborne DNA shed by animals to detect the presence of endangered wildlife species, including koalas, in their natural habitats in the local Redlands region. The technology can improve detection and tracking, aiding efforts and strategies for conservation. The tool is scalable, and researchers are looking to develop a toolkit for other Australian threatened species such as gliders.
- **An evaluation of the Threatened Species Program (TSP)** was undertaken by the Institute for Social Science Research (ISSR) from 2022-2025, in collaboration with the Queensland Department of Environment, Tourism, Science and Innovation. The program aims to manage and conserve threatened species in Queensland. The evaluation worked towards ensuring the program's success and effectiveness by developing an understanding of how the TSP interacts with its stakeholders, how their varied contributions are incorporated, and how outcomes and learnings are translated into future action.

Enriching our communities

UQ seeks to enrich communities in Queensland and around the world. In SDG 15, UQ achieves this through unique sites and research stations, working in collaboration with First Nations people to conserve and maintain important natural ecosystems and habitats and share this knowledge with the public and local communities through outreach and education initiatives. On UQ campuses planning and development processes and other infrastructure developments aim to ensure minimal impacts to the local environment.

UQ sites and research stations

UQ's campuses and research stations are on sites that host some of the most naturally biodiverse ecosystems. As part of the operations pillar of UQ's Sustainability Strategy, the University recognises the important and valuable contributions that Aboriginal and Torres Strait Islander people have made to caring for these lands, and the responsibility that UQ has to protect, maintain and conserve these natural ecosystems and to enhance their biodiversity in coexistence with the community. UQ's various conservation initiatives at these sites are contributing to SDG 15.1 targets by ensuring the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, and SDG 15.5 targets by taking urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and protect and prevent the extinction of threatened species.

- **St Lucia Lakes** are home to numerous native species of flora and fauna. As part of the UQ Lake and Amphitheatre project, the main lake was redesigned to support a healthy and self-sustaining ecosystem and officially opened in 2024. Its natural environment is beginning to flourish, and flora and fauna are repopulating, with more than 8,000 trees, palms, and shrubs and thousands of wetland plants planted in and around the lake to form a range of habitats.
- **The Hidden Vale Research Station** continued its mission throughout 2024 to research, restore and conserve habitats and wildlife populations. Long term projects included the Biodiversity Monitoring Project which aims to monitor faunal species presence and distribution, and track trends over time, providing essential ongoing feedback on the effects of restoration efforts. Another long-term project uses fire to reduce weed biomass and promote native plant biodiversity and is helping inform researchers and managers on how best to manage the HVRS, particularly in relation to threatened species. In addition, the Meadow Flat Restoration Project continued in 2024 and involved planting over 10,000 native trees to connect important habitat for species like the koala.
- **Moreton Bay Research Station** enables researchers, high school groups, and tertiary students from all over the world to access the estuarine, freshwater and terrestrial environments that comprise Moreton Bay, its islands, and the Coral Sea. In 2024, more than 1030 UQ students (both undergraduate and postgraduate) spent over 2800 learning days at the station, while 184 international students spent 2051 days engaging in learning activities. Over 1050 students from a variety of high schools both locally and internationally visited the research station. The station also contributes to SDGs for education in the wider community, with dedicated outreach educational activities such as the open day in August 2024 which focused on species survival in Moreton Bay. The event offered interactive exhibits, nature walks, research seminars and cultural talks about sound environmental stewardship by scientists and the Traditional Owners, the Quandamooka people.
- **Heron Island Research Station** is a world-class marine station that provides immediate reef access and extensive facilities such as research laboratories, aquariums, and teaching spaces for coral reef research and education on the Great Barrier Reef. More than 300 UQ students (both undergraduate and postgraduate) visited Heron Island Research Station in 2024, while 848 students from other

institutions spent time learning at the station. 68 volunteers (55 external to UQ) spent a total of more than 660 days supporting activity at the two stations. The 2024 Heron Island Research Station alumni tour also provided SDG 15 education in the wider community. Participants learned from marine scientists about the biodiversity of the reef and its current challenges and had the opportunity to swim, snorkel and reef walk with the local marine life.

Campus operations, policy and planning

In addition to its sites and research stations, UQ also ensures that it makes progress towards SDG target 15.9 by integrating ecosystem and biodiversity values into local planning and development processes. The [Environment and Sustainability Policy](#) commits UQ to environmentally responsible and sustainable practices across all of its operations, including to protect and, where feasible, enhance the natural environment. In addition, UQ's planning and development processes are governed by the [UQ Design Standards](#), which articulate that sustainability initiatives are to be embedded holistically into all projects through good design, protecting and, where possible, enhancing biodiversity, and preservation of heritage, cultural and natural assets.

Outreach and community engagement

- As part of a March 2024 event for BrisScience – UQ's public lecture series that makes science accessible to all – Professor James Watson presented on '[Finding and Conserving Australia's most Elusive Birds](#)'. This talk was open to the public and explored how the use of citizen science data has helped to determine which species are the least well-known and need urgent attention, as well as revealing Australia's top 10 least-known birds and the science and conservation efforts underway to save them.
- The Centre for Biodiversity and Conservation Science hosted a Brewery Science [panel discussion on 18 August 2024](#) at Straddie Brewing Co on Minjerribah with Professors Richard Fuller and Cath Lovelock. This event offered an opportunity for the public to learn more about the biodiversity of Moreton Bay, from leopard sharks to eastern curlews, and the current research and conservation efforts being undertaken.
- The School of the Environment hosted Experience Ecology for school groups from 28 October-19 November 2024. This event provided Year 11 biology school groups with an opportunity to complete mandatory practicals in Unit 3 of senior biology, with hands-on experience in calculating species diversity, classifying ecosystems based on vegetation structure, and ecological surveying techniques.
- UQ's research stations at Hidden Vale, Heron Island and Moreton Bay continued to offer education resources, programs and opportunities for high school and tertiary students from around the world, including science camps. In 2024 the island sites combined hosted 1,123 students from non-tertiary institutions, such as high schools.

Our global profile

UQ undertakes world-leading research and innovation that contributes to international sustainability, with a vision of piloting and deploying new and innovative sustainability solutions for global challenges. In 2024 UQ engaged in a number of initiatives that contributed towards SDG 15 on a global scale:

- **Strengthening Sustainability of the Indian Ocean Territories Marine Parks and Local Economy Through Collaborative World-Class Ecotourism** is a collaborative project with a focus on sustainable management of land for tourism. In 2024 UQ researchers continued to engage with communities on Christmas Island for the project which is funded by Parks Australia in partnership with Ecotourism Australia and the Christmas Island Tourism Association. The aim is to provide direction for sustainable tourism on Christmas Island by investigating the local community's preferences and attitudes towards tourism development, particularly on the remote island, where 63% of land is National Park and mining is being phased out. Dr Noreen Breakey visited the island in May 2024 with Dr Karen Hughes and in December 2024 with Dr Faith Ong to ensure that various communities had the opportunity to share their views through the future of tourism survey, while also meeting with tourism and government stakeholders. The survey was offered in English, Chinese and Malay to reflect the multicultural nature of the island's communities. It was primarily online but also had paper options, which were especially helpful for Seniors. Several recommendations have been developed from the project, including that sustainable tourism development must be based on the priorities and vision of the local Christmas Island community.
- Associate Professor Ya-Yen Sun from the School of Business was invited by the United Nations World Tourism Organization to present at 2 sessions on Enhanced Climate Action in Tourism at the UN Climate Change Conference (COP29) in November 2024. Associate Professor Sun's presentation addressed findings from a study looking at the increase in tourism's global carbon footprint between 2009 and 2019 by tracking international and domestic travel for 175 countries. Recommendations include limiting excessive tourism growth, reducing long-haul flights to lower the industry's emissions, and targeted measures such as carbon taxes, carbon budgets and alternative fuel obligations.
- **KONEKSI projects.** In 2024 UQ researchers were involved in several projects funded by KONEKSI, a collaborative initiative supporting partnerships between Australian and Indonesian organisations for inclusive and sustainable policy and technology. These projects worked towards promoting sustainable land management in the agricultural sector:
 - Addressing Vulnerabilities and Enhancing Resilience in the Smallholder Value Chains of Java's Peri-Urban Food Supply Systems engaged stakeholders through participatory workshops, interviews, and surveys to develop intervention strategies promoting sustainable agriculture in vulnerable agriculture areas in Java. The project aligns with Indonesia's vision for climate-resilient agriculture and demonstrates a replicable framework for enhancing sustainability and climate resilience in peri-urban farming systems.
 - MyINDAH Diet - Inclusive Digital Solutions for Healthy and Sustainable Diets and Food Security in Java's Urban and Peri-Urban Food Systems addressed sustainable use of land through the integration of digital technologies, systems dynamics modelling, and community engagement to promote resilient food systems. The project involved building databases of nutritional profiles, engaging communities through digital training, and developing predictive models for climate resilience. These outcomes contribute to SDG 15 by fostering sustainable land use,

conserving ecosystems, and empowering local communities through inclusive digital innovations.

- In 2024 UQ delivered the post-course workshop of the Australia Awards Indonesia short course on **Biosecurity Measures for Humans and Animals** which strengthened Indonesia's capacity to manage infectious disease risks affecting wildlife and ecosystems. Delivered by UQ International Development with expertise from the School of Veterinary Science and School of Public Health, the program trained officials in biosecurity policy, risk communication, and regional collaboration. By enhancing systems to detect and respond to threats to biodiversity, the course supported SDG15 by promoting sustainable ecosystem protection and reducing risks to terrestrial species.

Our people

This year UQ received 39 Clarivate Analytics Highly Cited Researchers (HCR) awards. Several of these researchers contribute towards areas that are core to SDG 15, such as forest conservation, biodiversity monitoring and sustainable agriculture. These researchers included Professor Hugh Possingham, Professor James Watson, Professor Richard Fuller, Professor Catherine Lovelock, Professor Ben Hayes, Professor Philip Hugenholtz, and Dr Donovan Parks.

Several UQ academic staff were honoured in the 2024 Queensland Young Tall Poppy Awards, which celebrate early-career researchers who combine scientific excellence with public engagement. Dr Matthew Holden, Dr Nasim Amiralian, Dr Elvis Okoffo, and Dr Brooke Williams all received awards for their work in areas that directly contribute towards SDG 15, such as biodiversity and ecosystem conservation and sustainable agriculture.