



Sustainability Report

2020-2021

Foreword

The University of the Sunshine Coast (UniSC) is a young, comprehensive, forward-thinking university. Sustainability has been our priority since our founding in 1996. Today, UniSC's award-winning facilities span five campuses across South East Queensland and we are more committed than ever to achieving sustainability throughout all our operations, teaching, research and partnerships.

At UniSC we recognise our responsibility as an institution of higher learning to ensure our teaching prepares the next generation of leaders, innovators and thinkers to understand the complex challenges facing the world, and equip them – through knowledge, guidance and role-modelling – with ways in which they can rise to meet these challenges.

Through our research and training of future researchers we are committed to being at the forefront of sustainability breakthroughs to the social, economic, environmental and technical problems facing our global community.

Operationally, we strive to improve our own processes, facilities and strategic planning in order to model sustainability best-practices, find cutting-edge ways to pioneer innovation, and become a leader by example to other universities, businesses and the wider communities we serve.

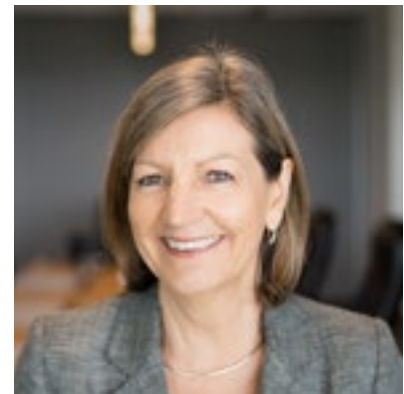
We are committed to achieving these objectives and know the importance of measuring our work in this space to understand what has been achieved and what steps we still need to take. Our accountability measures include policies, procedures and plans that guide our immediate and long-term actions across our campuses and sites at all levels of decision-making. These include our Sustainability Operational Policy, Sustainability Procedures, Carbon Management Plan, Strategic Plan, Campus Master Plan and Diversity and Inclusion Plan.

UniSC is the top ranked Queensland university in the 2022 Times Higher Education (THE) Impact Rankings. Our position on sustainability has widened from a triple-bottom line approach to a more holistic approach covering all 17 of the UN Sustainable Development Goals (SDGs). We are committed to using the SDG framework and the Times Higher Education (THE) Impact Rankings benchmarking tool to guide our decisions into what and how we teach, what research expertise we develop, and how we make operational decisions. This framework enables UniSC to identify areas for innovation and collaboration; areas that align with our vision to become Australia's premier regional university and our mission to enrich our regions, connect with our communities and create opportunities for all.



Professor Helen Bartlett

Vice-Chancellor and President



“For us, a high global (rankings) position benchmarks us as a rapidly growing university that is addressing emerging challenges to ensure we can all thrive and prosper. It means our researchers are finding solutions that are working, our students are learning to create global solutions, and that we are practicing our sustainability values every day on our campus by ensuring our policies align with goals backed by the United Nations.”

Visit the website for more information – UniSC tops Queensland for global impact ranking

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The University of the Sunshine Coast acknowledges the Traditional Custodians of the land on which we live, work and study. We pay our respects to local Indigenous Elders past, present and emerging and recognises the strength, resilience and capacity of all Aboriginal and Torres Strait Islander people.

Introduction

The University recognises, within its Sustainability Organisational Policy, that it has a responsibility to:

- a) create leaders, entrepreneurs and a workforce that recognises the importance of sustainability in their respective fields and understands how to embed sustainability into their work;
- b) build sustainability into both the design and intended outcomes of research and, where possible, to use current barriers to sustainability as indicators of where research should be focused;
- c) turn its focus inward to ensure operational activities are environmentally, socio-culturally and financially sustainable. This includes using the University's operations as a tool for learning to test best-practice models of sustainability and provide students with access to these learning opportunities;
- d) share its knowledge around sustainability with broad audiences across the communities in which it operates;
- e) share its understanding of sustainability and the impacts of its research with individuals and organisations (including local, state and federal political establishments and international organisations) that have the power to influence action; and
- f) embed innovation into its sustainability actions wherever possible.

This revised Sustainability Operational Policy highlights the shift of the University from thinking of sustainability in terms of the triple-bottom-line to a more holistic view of sustainability along the framework of the UN Sustainable Development Goals.

About the report

This sustainability report builds on the annual reporting that UniSC submits to the Tertiary Education Facilities Management Association (TEFMA) and aligns with the priorities set out in UniSC's Carbon Management Plan and Strategic Plan.

This report is structured to capture core, operational and engagement activities related to sustainability during the period of January 2020 – December 2021. The consumption data for this report was captured by UniSC staff and submitted to Trellis Technologies Pty Ltd for entry into Trellis, a software platform that was used to calculate emissions.

This period represented a time of significant change for the University, with the opening of the Moreton Bay campus and the considerable impact of the COVID-19 pandemic which shifted the way tertiary education was delivered, how staff worked, and the way that universities across Australia operated their campuses and facilities.

“Sustainability means ensuring inter- and intra-generational equity and justice. It means living within natural constraints and recognising the interconnected nature of environmental, socio-cultural and economic systems. Sustainability seeks to support resilient communities by reducing or eliminating negative environmental impacts due to human activities, protecting human rights for the most vulnerable and working towards global sustainable development initiatives such as the United Nations’ Sustainable Development Goals.”

– UniSC Sustainability Operational Policy

Awards

Times Higher Education Impact Rankings

The University of the Sunshine Coast scored 26th Overall globally in the 2021 Times Higher Education Impact Rankings with a score of 92.1 out of 100. The THE Impact rankings assess universities against their progress towards the United Nations' Sustainable Development Goals. This score represents the highest ranking of any university in Queensland. The University also did particularly well in regard to specific SDGs, scoring in the top 5 globally for action against SDGs 14 (Life below Water) and 15 (Life on Land).



3rd
Life below Water



5th
Life on Land



12th
Partnerships
for the Goals



=45th
Climate Action



100-200
Good Health and
Well-being

Athena Swan

The University attained Athena Swan Bronze Award Accreditation in 2020 and 2021. The award was recognition of UniSC's commitment to improve diversity and gender equity outcomes across the University. UniSC's efforts towards this goal ensure women from diverse backgrounds and under-represented groups can reach their full potential. Some of these efforts include formal mentoring for mid-career academics, HDR scholarships for female and gender diverse candidates in STEM disciplines, diversity KPIs embedded into Performance, Planning and Review (PPR) cycles for executives and senior staff, and university-wide principles for gender equity consideration regarding the selection of speakers and leaders for UniSC events.








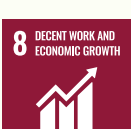


Excellence in Community Engagement

The Alliance for Suicide Prevention – Sunshine Coast (ASP), an initiative formed at UniSC's Thompson Institute, earned the annual Engagement Australia Excellence Award for Excellence in Community Engagement in 2021. ASP works with community-based groups and organisations, including Aboriginal and Torres Strait Islander communities, to co-develop suicide prevention strategies. The Alliance has trained over 2,000 people in suicide prevention since its formation in 2018. This reach contributed to the award, which is given for innovation and far-reaching impact.



Staff awards and appointments

Year	Staff member	Award
2020	Dr Celine Frere  	<ul style="list-style-type: none"> ✓ Queensland Young Tall Poppy Scientist of the Year (Australian Institute of Policy and Science) ✓ Department of Transport and Main Roads (\$2.6 million – 5-year monitoring of koalas from Cooroy to Curra) ✓ Australian Research Council Future Fellowship Grant (\$970,000 – 4-year study animal social behaviour and emerging fungal diseases in nature)
	Dr Kylie Scales 	<ul style="list-style-type: none"> ✓ Australian Research Council Discovery Early Career Researcher Grant (\$421,000 – data analytics to reduce fishery bycatch)
	Associate Professor Sandy O'Sullivan 	<ul style="list-style-type: none"> ✓ Australian Research Council Future Fellowship Grant (\$1 million – 4-year study re: impact and influence of Indigenous queer creative artists)
2021	Dr Glynn Thomas 	<ul style="list-style-type: none"> ✓ Australian Award for University Teaching (Excellence in scholarship that informs the design of innovative outdoor education curriculum)
	Dr Leah Barclay and Dr Tricia King  	<ul style="list-style-type: none"> ✓ Award for Excellence in Experimental Music (Listening in the Wild series of immersive soundscapes in conjunction with Kabi Kabi artist Lyndon Davis)
	Dr Karen Sutherland 	<ul style="list-style-type: none"> ✓ Education, Innovation and Employability Award (Connecting students with tailored work-integrated learning opportunities)

Year	Staff member	Award
2021	Profs Robert Harvey, Abigail Elizur and Timothy Smith	✓ Appointments to the Australian Research Council's College of Experts (Provide strategic advice, peer review, moderation and ranking of grant applications)
	  	
	PhD Student Rose Barrowcliffe	✓ Inaugural First Nations Archive Advisor – Queensland State Archives
		

Giving Day

The University of the Sunshine Coast holds an annual Giving Day, which raises funds for research and operational initiatives. In 2021 the Giving Day raised over \$268,000 for projects targeting mental health, koalas devastated by bushfires and disease and financially disadvantaged students. The efforts even saw the University win a national fundraising award, Best fundraising campaign – small team, at the annual Universities Australia Marketing, Communications and Development conference. (SDGs 3, 10, 13, 15)



GovHack

UniSC Engineering and Computer Science students won four awards at the 2021 GovHack event. The event provided participants with access to open government data for two days in order to develop solutions to real world problems. The four winning projects were in the following categories:

- Jobs and Growth for Moreton Bay / 'Deadly' Choices for Moreton Bay: Students developed **Where2**, an app that uses data on weather, business and activities to encourage local residents to get out into the community and develop cultural, economic and social connections.
- Road Safety Challenge: Students developed an app, **DRIVE**, that aims to increase the meaningful experiences of learner drivers.
- Preparing for the 2023 Games: Students developed a one-stop travel, accommodation and information app, **BrisLympics**, to help visitors plan their stay. (SDG 9)



Commitments and accreditations

The University of the Sunshine Coast has committed to processes and programs that align with its values and strategic vision.



UniSC is a member of **Australasian Campuses Towards Sustainability (ACTS)**, an organization representing higher education institutions that aims to inspire, promote, and support change towards best practice sustainability within the operations, curriculum, and research areas of its members.



UniSC has signed on for a national pilot of the **Carnegie Community Engagement Classification**, which recognises university commitments to the communities they serve. The cohort of universities engaged in the pilot will complete the existing application and identify adjustments to the classification and recommended solutions to better represent the Australian context.



UniSC is a signatory to the **Talloires Declaration** which sets out ten actions agreed by Vice-Chancellors worldwide to reduce the natural resource consumption and emissions produced as a result of the University's activities. University Leaders for a Sustainable Future is the Secretariat for Talloires Declaration signatories.

Vision	To become Australia's premier regional university.
Mission	Enriching our regions, connecting with our communities and creating opportunities for all.
Values	At UniSC we will: Advocate for equitable access to education and knowledge. Recognise and embrace diversity and inclusion . Champion environmental sustainable principles and practices. Commit to fair and ethical behaviour. Respect our people, our communities, and their potential. Be accountable to ourselves and each other. Strive for excellence and innovation in all that we do.

Sustainability at a glance

Land and Biodiversity

300+
plants/year planted

50 plants
Student tree plant
– September 2021

**1 burn per year
(1ha in size each)**
within the compensatory
habitat area (Sunshine
Coast campus)

**60 of 74
Nest Boxes**
inhabited by 6 species
(possums, gliders,
rainbow lorikeets, native
bees, wood ducks
and microbats)

Water

Over 50%
of water used at the
Sunshine Coast campus
in 2020 & 2021 was
recycled

Students

Disability
8.2% in 2020;
9.1% in 2021

**Aboriginal or
Torres Strait
Islander**
3.4% in 2020;
3.4% in 2021

**First in family
to attend
university:**
44.3% in 2020;
43.6% in 2021

Waste

Over 41%
streamed waste²
at Sunshine Coast
campus recycled or
composted in 2020

Over 54%
streamed waste²
at Sunshine Coast
campus recycled or
composted in 2021

**Expanded
internal streams:**
added CfC, Soft plastics

2 Cafés
using borrow ware
(reusable mugs)

Energy

**11,425
gigajoules (gj)**
of 48,690 gigajoules
electricity consumed
at the Sunshine Coast
campus sourced from
on-site solar PV

24%¹
energy from on-site
renewables across UniSC
sites in 2020 & 2021

Discounted food

Over 80,000
subsidised food items
sold in the cafes (80,670)
in 2021 – for a total value
of over \$230,000 (ex GST)

Transport

**EV Charging
Stations: 4**
at Sunshine Coast
campus

1. Approximately

2. These don't include clinical waste.



Governance

SDG 16: Peace, Justice and Strong Institutions

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.



Context

The University of the Sunshine Coast first opened at its Sunshine Coast campus in 1996. It has since grown from a single campus university catering to an intake of 524 students to a university with six campuses and multiple study hubs that are home to over 18,000 full and part-time students.

UniSC is committed to environmental sustainability for the benefit of students, staff and the wider community. The University has an active program of sustainability initiatives that address both large-scale issues such as energy, waste and the environment, and targeted activities such as the development and use of green cleaning practices.

The University's goal is to be carbon neutral by 2025. It is intended that UniSC's ambition will also increase over time by widening the scope of emissions sources included and expanding the facilities and services accounted for. To measure carbon emissions, data was collected in consultation with staff and suppliers. Site-specific sources such as electricity, stationary fuel use, paper and waste were allocated to the individual site. However, sources such as passenger vehicles and business travel emissions are considered as whole-of-UniSC. While the scope and scale of emissions sources at sites is known with accuracy, the University is working to improve other emissions data, such as Scope 3 emissions throughout the University's supply chain.

UniSC also recognises that the major drivers of growth in energy use and carbon emissions that need to be managed to achieve carbon neutrality are the increasing student numbers and the opening and expansion of our Moreton Bay campus. The impacts felt as a result of changes to delivery of teaching and research in response to the COVID-19 pandemic and shifting preferences amongst university students have provided a deeper understanding of the levers that the University can pull to reduce its emissions from energy and water use and the generation of waste. These shifts have also highlighted where challenges to achieving these reductions still remain. (SDGs 7, 11, 12, 13)





UniSC Sunshine Coast

Strategic plan

The UniSC Strategic Plan 2021-2024 commits the University to becoming Australia's premier regional university through enriching its regions, connecting with our communities and creating opportunities for all.

The Strategic Plan sets out seven values, each contributing to the sustainability of the University:

- Advocate for equitable access to education and knowledge.
- Recognise and embrace diversity and inclusion.
- Champion environmental sustainable principles and practices.
- Commit to fair and ethical behaviour.
- Respect our people, our communities, and their potential.
- Be accountable to ourselves and each other.
- Strive for excellence and innovation in all that we do.

These values align with several of the UN Sustainable Development Goals, in particular: SDG 4 (Quality Education); SDG 5 (Gender Equality); SDG 9 (Industry, Innovation and Infrastructure); SDG 11 (Sustainable Cities and Communities); and SDG 16 (Peace, Justice and Strong Institutions). The Plan also establishes six goals, each with multiple strategies and KPIs that are reported against to ensure the University is achieving the goals. (SDGs 4, 5, 9, 11, 16)



University of the Sunshine Coast Strategic Plan 2021–2024: 6 Goals

- 1. Opportunity: Inspire more people to achieve their ambitions through education.**
 - 1.1 Increase participation and support life-long learning through streamlined access pathways, diverse learning options, and partnerships.
 - 1.2 Attract and retain a diverse domestic and international student community with relevant program offerings matched to market demand.
 - 1.3 Enhance the student experience to maximise student success and support accessibility and equity outcomes.
- 2. Employability: Enable more people to work, contribute, and innovate in their local and global communities.**
 - 2.1 Develop quality curricula that supports student success.
 - 2.2 Expand and enhance work-integrated learning opportunities to increase the readiness of graduates to enter the employment market.
 - 2.3 Build UniSC's organisational capability to enable improved graduate employability outcomes.
- 3. Research Impact: Produce research outcomes that make a difference.**
 - 3.1 Build critical mass of regionally beneficial and globally impactful research activity aligned to areas of existing and emerging strength.
 - 3.2 Develop strong, collaborative and productive research partnerships that contribute to genuine innovation and knowledge generation and have sustained benefits for end-users.
 - 3.3 Establish a researcher development framework encompassing HDR students and research staff that encourages development and application of novel, relevant and useful research.
- 4. Engagement: Empower communities to thrive through dynamic and productive partnerships.**
 - 4.1 Be a catalyst for development of mutually beneficial partnerships with Aboriginal and Torres Strait Islander leaders and communities in the regions from Moreton Bay to the Fraser Coast.
 - 4.2 Achieve a distinctive identity and contribution for each UniSC campus through alignment with regional priorities.
 - 4.3 Initiate and strengthen mutually beneficial partnerships and collaborations, locally and globally, that align with, and provide momentum for, UniSC's teaching and research areas of focus.
 - 4.4 Strengthen UniSC's organisational capacity for effective engagement and ensure the public positioning reflects the University's strategic aspirations.
- 5. Infrastructure: Build a contemporary, sustainable, accessible university.**
 - 5.1 Future-proof the University through focused growth that embraces opportunities and delivers sustained financial security.
 - 5.2 Re-envision UniSC campuses to reflect student, staff, community and environmental sustainability aspirations.
 - 5.3 Create a University digital strategy that aligns with, and promotes, contemporary digital practices and expectations.
 - 5.4 Maximise infrastructure investment by aligning innovation opportunities with UniSC teaching and research activities.
- 6. People and Culture: Become a workplace of choice.**
 - 6.1 Develop a workplace that nurtures, attracts and retains a diverse and high-performing workforce.
 - 6.2 Develop capability at all levels of the organisation to foster expertise, encourage contemporary practice and realise the full potential of our people.
 - 6.3 Develop an ethical, respectful, cooperative and collaborative culture that crosses geographic and departmental boundaries.
 - 6.4 Ensure that HR governance and management frameworks are in place to support a high-performing, safe and accountable workforce.
 - 6.5 Ensure that corporate governance and management frameworks are in place to support operations within the University's approved risk appetite.

Carbon management plan

The University of the Sunshine Coast adopted a Carbon Management Plan (CMP) in 2017 as an acknowledgement of its core responsibility to act on sustainability. The purpose of the CMP is to be a roadmap to net zero emissions by 2025. This certification will be achieved through the Government's Climate Active program (formerly National Carbon Offset Standard). The Plan established an initial focus on measurable carbon abatement efforts through in-house initiatives, and a secondary focus on off-site actions, such as purchasing renewable energy, developing renewable energy generation or carbon offsets. The Plan is organised into three main themes, each with a series of underpinning actions.

Management System Actions: Governance of the CMP; development of a strategic reporting framework and training; establishment of responsibilities and accountabilities; assessment of carbon emissions sources; enhance data management systems; set, monitor and report on targets; plan and budget for CMP actions; achieve accreditation; measure and verify individual projects; and implement a communications plan.

Carbon Abatement Actions: LED lighting upgrades; Heating Ventilation Air Conditioning (HVAC) upgrades; thermal energy storage; roof and carpark solar PV; battery storage; chilled water connection upgrades; organic waste management; hybrid energy generation; application of ecologically sustainable design (ESD) principles; mid-scale solar/wind/bioenergy generation; renewable energy purchasing; and carbon offset purchasing.

Engagement and Capacity-Building Actions: Annual Sustainable UniSC Day; engaging students and staff to foster a culture of energy efficiency; facility and department-level energy reporting; visual displays that show live/current resource consumption; energy and carbon suggestion box; work with contractors on carbon reduction behaviours; staff and contractor inductions; student orientation; marketing and communicating sustainability efforts; BYO cup incentive program; sustainable events; sustainable travel; Sustainability Champions awards program; learning and course-related actions; charging points for electric and hybrid cars.

Carbon emissions throughout the Plan are categorised into three Scopes in accordance with greenhouse gas accounting and classification systems:

- Scope 1:** Direct emissions are those generated directly by the organisation (eg, the use of fuel, burning gas or company-owned vehicles).
- Scope 2:** Indirect emissions are those generated outside of the organisation's boundaries to provide energy (eg, purchased electricity from the grid).
- Scope 3:** Indirect upstream and downstream emissions: Upstream emissions are those from third parties in direct relation to the organisation (eg, purchased goods, business travel, employee business travel). Downstream emissions include waste, leased assets, and investments made by the organisation.

The University currently measures Scope 1 (transport and stationary fuels and refrigerant gases) and Scope 2 (electricity) emissions. Scope 3 emissions that have been captured in the CMP include paper, air travel, electrical line loss, non-University owned fuel use, waste, sewerage/water, hire cars and taxis, and leased assets and investments.

The Campus Master Plan is due to be revised in 2022. (SDGs 7, 12, 13, 17)



Diversity and inclusion plan

Goal 6 of the University's Strategic Plan incorporates a clear commitment to diversity. The **Diversity and Inclusion Plan 2021 – 2023** sets out a vision of an organisation where everyone feels they belong and are respected, connected and empowered.

The Plan sets out definitions of diversity and inclusion, as follows:

Diversity: Describes the multifaceted identities in our UniSC community, such as gender, race, ethnicity, cultural and linguistic background, age, ability, sexual orientation and socio-economic status. It also includes our professional and educational identity with characteristics such as learning and working styles. These aspects are interconnected and come together in a unique way for each individual, shaping personal perspectives and life experiences.

Inclusion: Embraces, values and champions diversity, through creating a culture where everyone has an equitable opportunity to contribute and thrive.

The Plan contains six key focus areas: Aboriginal and Torres Strait Islander peoples; cultural and linguistic diversity; disability; gender equity; LGBTIQ+; and life stages. It also contains enabling plans, which detail actions and metrics to measure progress. These enabling plans align with the University's strategic plan and policies. The plans and their metrics are as follows:

HEPPP Activity Plan: Increase the proportion of students from diverse backgrounds who access and participate in education.

Access and Pathways Strategy: Increase in the number of Indigenous, Regional Rural and Remote and Low SES school students participating in widening participation activities.

Athena SWAN Action Plan: Increase the attraction retention and progression of under-represented groups of staff in the University.

Disability Access and Inclusion Plan: Increase the positive outcomes in employability, research and representation across the University.

Gender Principles: Equitable presentation and participation of individuals from diverse backgrounds at UniSC events.

Indigenous Employment and Career Strategy: Increase the representation of Aboriginal and Torres Strait Islander staff members.

Student Health and Well-being at UniSC: Student/staff ratio maintained with and increase in the proportion of students reporting positive feedback and quality of impact of student support services.

Four principles contribute to the Diversity and Inclusion Plan: Safe, supportive and respectful; Accessible and equitable opportunities and experiences; Culture of belonging; and Individual and collective responsibility. In order to achieve these principles UniSC developed initiatives in order to increase visibility, enhance education and raise awareness. To build in accountability, the Vice-Chancellor and President's Equity, Diversity and Inclusion Committee will monitor the Plan and associated initiatives and Executive sponsor and student and staff champions will be selected to promote participation in those initiatives. (SDGs 4, 5, 10, 16)



UniSC Student Governance Framework

The Plans listed above were developed primarily by University staff members. However, the University's students are the core focus of UniSC, as an educational institution. Therefore, a governance structure with student representatives ensures that a diverse student voice is heard.

This Framework consists of the following representative groups:

UniSC Student Senate: The highest governing student body. The Student Senate reports to the UniSC Council and works closely with Executive staff.

Student Representative Council: The SRC represents the views of UniSC school groups and reports to the Student Senate. They work with Executive staff related to teaching and learning.

School Student Groups: The SSG represent students in each UniSC school and report to the SRC. They work closely with Heads of School to provide student perspectives.

(Campus) Student Liaison Groups: The SLGs represent the students from the extension campuses. They work with campus leads to provide advice and student perspectives regarding campus services.

Postgraduate Student Association: The PSA represents Higher Degree by Research and coursework postgraduate students. They report to the Student Senate and work with Executive staff and the Graduate Research School.

Aboriginal and Torres Strait Islander Student Leadership

Committee: ATSISLC represents Aboriginal and Torres Strait Islander students and reports to the Student Senate. They work closely with Indigenous Services.

International Student Group: The ISG represents international students and reports to the Student Senate. They work closely with Student Services and Engagement.

Disability and Inclusion Student Group: The DISG represents students with a disability, carers and allies. They report to the Student Senate and work closely with Accessibility Services.

High Performance Student Athlete Group: The HPSAG represents student athletes and reports to the Student Senate. They work closely with the High Performance Student Athlete Program Coordinator.

Student Guild: The Guild is a not-for-profit organisation that is independent of the University. They focus on advocacy, run recreational events and offer support to student clubs and societies, as well as legal support and welfare services. Two Guild representatives sit on the Student Senate.

These groups contribute their perspectives to the University's leadership, serving as a source of productive communication, fostering a sense of belonging and highlighting key issues of importance to the student body. (SDGs 4, 5, 10, 16, 17)



Core activities

SDG 4: Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



Teaching and scholarship

The University of the Sunshine Coast is committed to ensuring its educational opportunities are accessible to students throughout the South East Queensland region and beyond. UniSC has identified seven values in its Strategic Plan 2021-2024, including “Advocate for equitable access to education and knowledge.” This value aligns with UniSC’s goal of Opportunity, which seeks to inspire more people to achieve their ambitions through education, and with the UN Sustainable Development Goals.

Programs like the Tertiary Preparation Pathway (TPP), a free bridging course that enables individuals to experience university life before committing to a full degree, are offered to ensure students that haven’t travelled the traditional path can still access university. The TPP courses are free for domestic students, helping them to select and excel in the right program. They are designed for individuals that haven’t studied in recent years or that do not have a selection rank. TPP courses focus on study skills, including critical reading, assignment writing, and referencing. TPP courses, up to four per person, can be pursued full or part time and are available during the two semesters, as well as during the intensive summer session. Successful completion of TPP provides direct entry to most UniSC degrees.

Other initiatives, such as UniSC’s Headstart program and the partnership between UniSC and TAFE Queensland, help to expand the reach of the University. The Headstart program permits senior high school students to study first year university subjects. The Memorandum of Understanding between TAFE Queensland and UniSC allows students to easily transition between the two higher learning institutions. The University has also launched multiple certificate-level short courses aimed at regional Australians wanting to retrain in areas of national priority including teaching, aged care and health.

The emergence of COVID-19 drove the need to expand technology-enabled offerings. The University, as a result, made an extensive range of degrees available online for UniSC students. A benefit of this expansion meant that the Fraser Coast, Gympie and Caboolture campuses, previously limited by the cost of teaching only face-to-face, were able to offer students a broader range of programs. Another benefit of the online expansion was that it made courses more accessible to students with work and family commitments who could pursue their studies on a schedule that suits them.



Athena SWAN (Scientific Women's Academic Network)

UniSC was recognised nationally in February 2020 for its efforts to advance the careers of women, trans and gender diverse people working in the STEMM disciplines of science, technology, engineering, mathematics and medicine. The University received an **Athena SWAN Institutional Bronze Award** for its proactivity in linking issues to data to drive change. In order to qualify for this Award, UniSC had to demonstrate it understood the current state of gender equity, diversity and inclusion in the University and the barriers that were impeding attraction, retention and progression and creating inequity. UniSC also had to develop an Action Plan to remove or reduce at least five of those barriers.



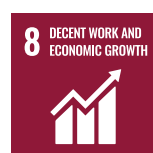
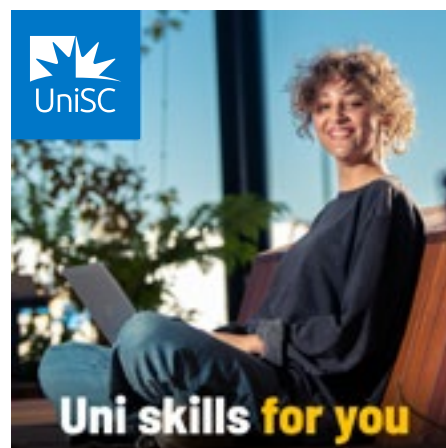
The University has already put several initiatives in place, including:

- Formal mentoring for mid-career academics.
- HDR scholarships for candidates underrepresented in the STEMM disciplines.
- Executive and Senior staff have equity and diversity KPIs embedded in their performance reviews.
- University-wide principles for gender equity considerations in the selection of speakers and leaders for events.

Equal access to education

The University advocates for equitable access to education and knowledge and has established several programs aimed at reducing barriers to accessing tertiary education at UniSC. These programs include:

- A two-day **University Skills for You** course held in January 2021. The free course provided an introduction to what is involved in studying at a TAFE or university. The course focused on helping individuals that hadn't studied in years or who did not finish high school to develop confidence and academic skills and to recognise the skills they have learnt through their own personal and work experiences. UniSC advisers were involved in the course to provide support to develop study and career plans.
- The Queensland Human Rights Commission and Queensland Council for LGBTIQ Health delivered **online workshops** in August and September 2021 to broaden participants' knowledge of aspects of diversity and inclusion. The workshops, offered to University students, included a sexuality and gender identity awareness session titled "Becoming a UniSC Ally" where they would learn about LGBTIQ terminology, sexual orientation, gender identity, common stereotypes and factors that make it difficult for LGBTIQ students and staff. Sessions on unconscious bias, where it comes from and how it affects decision-making, and gender identity and discrimination were also included.



Researcher: PhD candidate Amelia Olsen (pictured right, standing)

Campus: UniSC Fraser Coast

Focus: Improving outcomes for remote, rural and regional school students by identifying strategies employed by school principals to boost well-being and academic success.

Process: Case study review of innovative practices across regional, rural and remote Australian schools.

Goal: Identification of strategies to transform low student engagement into high levels of academic improvement and well-being. Development of a hierarchy of priorities to create cultural change and avoid leadership burnout.



Academic Freedom and Integrity

Freedom of thought and speech are key to developing the innovation that UniSC values. It is important, as well, that integrity is a core value for students and staff in order to create a space that is welcoming and respectful of others' thoughts, words and work. This is supported through the Academic Integrity module and the Freedom of Speech and Academic Freedom Governing Policy. The **Academic Integrity module** is designed to help students develop an understanding of what academic integrity is at the University and provides advice on how to study successfully in an open academic environment. It highlights the values of acknowledgement (of others' work), honesty (in presenting your own work), and responsibility (in developing your work).

The **Freedom of Speech and Academic Freedom – Governing Policy** affirms the University's commitment to freedom of speech and academic freedom, ensuring these freedoms are not unnecessarily hindered by regulations. It applies to staff and students alike and incorporates, but is not limited to, the freedom for staff to teach and research and publish their work, the freedom of staff and students to engage in intellectual inquiry and to express their opinions and beliefs, and the freedom of students to participate in societies and associations. It also incorporates a duty for the University to foster the well-being of staff and students, safeguarding against unfair disadvantage, discrimination or threatening or intimidating behaviour. It does not, however, extend that duty to protect a person from feeling offended or shocked or insulted by another person's lawful speech. (SDGs 4, 16)



Research

The University of the Sunshine Coast set a goal to **produce research outcomes that make a difference** as part of its Strategic Plan 2021-2024. To achieve this, the University has focused on research that is strategically aligned, regionally beneficial and globally impactful. The strategic alignment looks to areas of existing strength within the University and the development of collaborative and productive partnerships that can drive innovation. Many of the University's key areas of research strength contribute to achievement of the UN SDGs, including:

- Aquaculture / Seaweed Research Group
- Marine / Coastal environment
- Climate change and adaptation
- Health and well-being
- Forests
- Wildlife and biodiversity



SDG 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

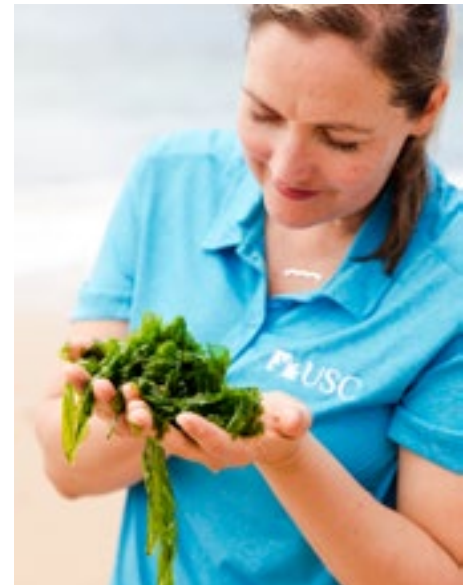


Aquaculture / Seaweed Research Group

The UniSC Seaweed Research Group brings together over 30 academics, staff and students to research and develop advancements that take advantage of seaweed's environmental, economic and social potential. The Group is made up of experts in business, creative industries, social and environmental science, health and technology to develop these solutions. Though it is a resource found below water, seaweed also has an impact on land, contributing to improved health and well-being, local and regional economies and even the reduction and sequestration of greenhouse gases. As a food source, seaweed contains vitamins and is high in protein, fibre and essential fatty acids. Economically seaweed can be used to create gelling agents, soil fertilisers, livestock feeds and in nutraceuticals and cosmetics. Environmentally, seaweed plays a critical role in reversing the effects of water pollution, sequestering carbon and deacidifying water.

One of the most impressive genus of seaweed, *Asparagopsis*, is found right off the South East Queensland coast. Professor Nick Paul's work with this puffy pink seaweed was even featured on the Australian Broadcasting Corporation's final episode of **Fight for Planet A: Our Climate Challenge** given its potential to nearly eliminate the methane emitted by cows and other ruminants when they burp simply by using it as a supplement to their normal diet. Professor Paul and other Group researchers have been focused on discovering the best ways to both grow large quantities of and increase the concentration of the most active chemical compounds within this seaweed. Considering the contribution of the cattle industry to climate emissions, the ability to make *Asparagopsis* an economically viable ingredient for cattle ranchers across Australia and worldwide could have a significant impact on global greenhouse gas emissions and drive local and national industry. (SDGs 2, 9, 13)

Beyond using *Asparagopsis* as a feedstock for ruminants, it can also be powdered and added to the diets of farmed fish. This quadruples the immune response of rabbitfish, helping them to be more resistant to pathogens. This result is stronger than the existing immunostimulants being used in the aquaculture industry and highlights the potential of moving away from antibiotics or veterinary drugs that have negative impacts on the environment, animals and consumers. Two other seaweeds showed promise, nearly doubling the fishes' immune response – *Dictyota* and *Ulva*. This work has been led by PhD candidate Valentin Thépot and supervised by Professor Nick Paul, Dr Alexandra Campbell and Dr Michael Rimmer. (SDGs 2, 6, 9, 17)



Researcher: Dr Alexandra Campbell

Campus: UniSC Sunshine Coast

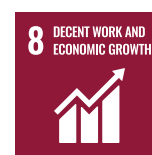
Focus: Engaging the community to work on the restoration of seaweed forests, enabling them to reconnect with nature. Investigating the potential of seaweed to solve big problems, such as restoring other species, cleaning contaminated waterways, and boosting food security.

Recognition: 2020-2021 Superstar of STEM (Australian Government Department of Industry, Science, Energy and Resources)



Seaweed is an important source of livelihoods and nutrition for Pacific Islanders. Two projects have focused on this role in 2020 and 2021. The Dietary intake methodology and reporting in Pacific Island Research project explored the methods for collecting and analysing dietary seaweed intake in select Pacific Island countries and will use that information to identify gaps and tools to accurately measure dietary intake moving forward. The Improving nutrition through women's and men's engagement across the seaweed food chain in Kiribati and Samoa project is multi-faceted, examining the health and well-being benefits of seaweed to local communities and the economic and gender benefits of seaweed production in generating income opportunities for women. (SDGs 2, 3, 8, 17)

Research by UniSC Senior Lecturer in Physical Geography Dr Javier Leon has shown the critical role of seagrass meadows in absorbing carbon dioxide from the atmosphere. Dr Leon has been working with researchers at the Centre for Marine Ecosystems Research at Edith Cowan University to model the impact of the loss of over 161,000 hectares of seagrass along Australia's coastline since the 1950s. This is equivalent to a two percent increase in Australia's annual CO² emissions. His work focused on analysis of spatial data and mapping and wave modelling. The wave modelling, in particular, showed that the loss of seagrass as a buffer led to hydrodynamic energy moving seabed sand and causing carbon loss. Dr Leon highlighted the need to improve water quality by reducing soil and fertiliser runoff in order to counteract the water turbidity and sea-level rise that have negatively impacted nearshore seagrass meadows. (SDGs 6, 13, 17)



SDG 9: Industry, Innovation and Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.



Marine / Coastal environment

The University of the Sunshine Coast has myriad degrees related to the marine and coastal environments, from majors in the sciences, engineering and business to focused minors such as Climate Change and Coastal Zone Studies, and Coastal and Marine Environments. The students enrolled in these degrees can learn from UniSC academics and HDR graduate students undertaking innovative research that has the potential for a significant positive impact.

Dr Kylie Scales received a Discovery Early Career Researcher Award in 2020 that provides grant money to support her research. She uses **data analytics** to create maps and predictive tools to identify where accidental bycatch of longline fishing traps sea life. These bycatch hotspots often move in a dynamic way within the shifting ocean. Knowing where the overlap exists between longline fisheries and protected marine species habitats can lead to more informed decision making by those fisheries, as well as environmental management organisations. (SDGs 2, 11, 14, 17)

UniSC PhD graduate student Dr Jack Koci was awarded the University's highest honour for a graduating student, the Chancellor's Medal, for his support of other researchers and the impressive outcomes of his doctoral project. His doctoral project used **drone-based remote sensing techniques** to study sediment sources to the Great Barrier Reef (GBR). His work has led to a joint project between UniSC and CSIRO, Australia's national science agency. The goal of the project is to improve the quality of water entering the GBR and the productivity of agricultural systems by investigating gully erosion control measures. Expanding on the use of technology in marine studies, UniSC students and academics devised an **immersive virtual reality environment** that enables people to experience a turtle's perspective of coastal flooding and light pollution. Dr Javier Leon and his students used drones to create 3D topographical models of Peregian and Sunrise beaches where marine turtles regularly nest and combined those models with visualisations of storm tides and light generated by billboards. This tool, which can be viewed using virtual reality headsets, was showcased at Sunshine Coast Council's TurtleCare training day in November 2021. (SDGs 9, 11, 13, 14, 15, 17)



Technology focus: Water solutions for farming

Hydrology Sandbox

Mitch Dakin, a UniSC Civil Engineering Honours student, has developed an **Augmented Reality (AR) hydrology sandbox** that is much more than a child's toy. The sandbox will be used by Growcom, Queensland's peak horticulture industry body, as a teaching tool for local growers. The sandbox is overlaid with a digital projection of the Earth's surface, which can be updated live in 3D. The tool will be useful to demonstrate the flow of water in different environments. The tactile nature of the sandbox would lead to shifts in water flows based on how the sand is moulded. Growers can instantly see the difference of water flows between hills and floodplains by simply shifting the sand to represent these different landscapes. The key focus of this work is to improve the understanding of water flows in order to reduce farming related environmental impacts, such as agricultural run-off into waterways. (SDGs 6, 9, 15)



Evaporation Mitigation Technology

Jaydan Turner, a UniSC Engineering student, has been working with QUIT EVAP Australia to assist with the build and testing of the company's Evaporation Mitigation Technology. His final-year project is focused on assessing the polypropylene floating system, which will be installed on one of the lakes on the University's Sunshine Coast campus. Jaydan is investigating the impact of wind on the device, as well as the tensile loads placed in restraining cables connected to load cells in the mooring buoys. His research work is assisting the small business owner to access resources that will help get the product to market. (SDGs 15, 17)



Another key partnership within the Marine studies environment was developed in 2021 when UniSC became part of the **Marine Bioproducts Cooperative Research Centre (MB-CRC)**. The immense scale of this partnership – 68 Australian and international research, government and industry partners – is needed to transform the emerging marine bioproducts sector in Australia into a globally competitive sustainable industry. The University's involvement includes the participation of UniSC's GeneCology Research Centre which has a strong focus on the discovery of bioactive natural products and proteins that can be used in medical and technological spaces and offers expertise in molecular biology. (SDGs 9, 17)



SDG 13: Climate Action

Take urgent action to combat climate change and its impacts.

13 CLIMATE ACTION



Climate Change and Adaptation

UniSC's Sustainability Research Centre, founded in 2007, has focused on three key research themes: Climate Change Adaptation; Environmental Management and Governance; and Sustainable Livelihoods. Within Climate Change Adaptation, the SRC researchers have focused on coastal and water management, urban and regional policy, and disaster and natural hazard management. Their goals for this research have been to integrate climate change resilience measures into policies and planning; strengthen adaptive capacity to climate-related disasters; and build capability to meet climate change.



Professor Claudia Baldwin of UniSC teamed up with Tony Matthews of Griffith University in late 2020 to conduct a joint research project titled **Green Infrastructure for Mitigating Heat Stress in Aged Care Facilities**. The Queensland Department of Environment and Science grant funded project is focused on developing heat adaptation plans for UnitingCare's Queensland aged care facilities with particular attention paid to the addition of greenery to reduce heat loads and heat stress for the residents. The project team is also conducting workshops to determine whether heat adaptation plans can be of benefit throughout the wider aged care sector. The goal of the project is to develop a model Heat Adaptation Plan for the state's aged care industry. (SDGs 3, 9, 11, 13, 17)



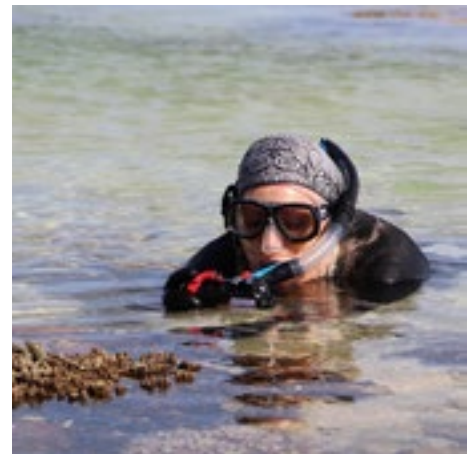
Researcher: Professor David Schoeman

Study: Global warming is causing a more pronounced dip in marine species richness around the equator

Focus: Examining how the warming waters near the equator are impacting benthic and pelagic species.

Findings: Benthic species, such as corals, oysters and seaweeds have not declined at the equator, but the number of free-swimming pelagic species fell significantly between 1965 and 1985 and has continued to drop further through 2010. The study notes the drop in species could signal movement of these species away from the area rather than their extinction. The process of tropicalisation, where species with warm-water tendencies move in while cold-water tendency species move on, is visible on the Sunshine Coast and down to Sydney. These findings hint at a future where fish stocks decline significantly in the tropics and subtropics, threatening livelihoods of fishers and tourism providers in tropical areas, particularly throughout the Pacific Islands.

Another collaborative project (**Mistra Environmental Communication – reframing communication for sustainability**) began work in mid-2020 to transform communication of environmental and sustainability issues. The 4-year project is a collaboration between the University of the Sunshine Coast, the University of Texas (USA), Charles University (Czech Republic) and Lund University (Sweden), as well as governmental and non-governmental organisations and the business sector. Professor of Sustainable Development Neil Powell is leading the focus area of Science and Knowledge Co-Production while Dr Marcus Bussey will be working with Prof Powell to identify how to incorporate sustainability concepts into mediums such as serious games systems. Using these transformative methods will enable the team to test how messages of change can be conveyed in a playful or creative manner, eliminating the political aspects that emerge in more traditional forms of communication. (SDGs 13, 17)



The University of the Sunshine Coast and the Great Barrier Reef Foundation partnered in early 2020 as part of the Reef Islands Initiative. The **partnership** is focused on measuring the changes to critical reef species and habitats occurring as a result of local and global climate pressures. The researchers, drawn from UniSC, the University of Queensland and Southern Cross University, have begun work on the 4-year project that will fill knowledge gaps on the island’s in-water species, monitor revegetation efforts and their impacts on the species and result in a research template that can be rolled out to other reef islands beyond the study site of Lady Elliot Island. (SDGs 13, 14, 17)



A **3-year research project** started in August 2021 has begun using advanced genetic sequencing and aerial drones to study humpback whales. The study is examining fluctuations in numbers and behaviour of whales and their interactions with sharks. The idea of the study is to better understand the gene flow and social structure of humpbacks and the impacts of their predators in order to ensure the whales’ population in Hervey Bay, the world’s first Whale Heritage Site. Fraser Coast Regional Council, through the Hervey Bay Whale Heritage Site Steering Committee and Fraser Coast Tourism and Events, has provided funding for the study in recognition of the importance of the whale watching industry to the region. (SDGs 13, 14)



Technology focus: Citizen Science

Climate change adaptation and NOBURN

Researchers from UniSC have begun development on a citizen science app for people residing in fire-prone areas. Thanks to an Australian Government Citizen Science Grant, researchers will be able to design and implement the app, called NOBURN (National Bushfire Resilience Network), with the help of citizen scientists who will be encouraged to collect data such as photos and forest fuel samples. The collected data will be cross matched with satellite imagery to train artificial intelligence systems to predict the probability, severity and burn area of potential bushfires. This information can then be shared with key stakeholders such as fire authorities, landowners, government representatives and forest professionals, as well as residents in areas likely to be impacted.



Leaf to Reef: Biodiversity of Lady Elliot Island

The 'Leaf to Reef: Biodiversity of Lady Elliot Island' project, led by UniSC researchers, has called out to citizen scientists to compile a comprehensive species list of marine life, seabirds, and mammals around Lady Elliot Island in the Great Barrier Reef. This project, running between 2020 and 2024, is part of the larger Reef Islands Initiative by the Great Barrier Reef Foundation that is working towards the establishment of climate change refuges within the Reef. Though detailed information about the species that frequent Lady Elliot Island is limited, the study is aiming to capture current and historical information from the public that will create a picture of how climate change and species drift have impacted the species on and near the Island. Once a better understanding of how changes have impacted local species has been gained, strategies and actions can be implemented to safeguard the species currently present. (SDGs 14, 17)



UniSC Lecturer in Mechanical Engineering Dr Charith Rathnayaka commenced as the lead of an **advanced computer modelling project** that could make carbon capture viable in 2021. The joint project with research partners from Griffith University, Queensland University of Technology and The University of Manchester assessed ways to improve the design, manufacture and operation of 'liquid marbles', microscopic liquid droplets coated with nanoparticles that form a porous shell preventing moisture from reaching adjoining surfaces. The resultant resistance to contamination and their low-friction, flexible manipulation potential lends them to a range of applications, including gas capture. (SDGs 9, 13, 17)



SDG 3: Good Health and Well-being

Ensure healthy lives and promote well-being for all at all ages.

3 GOOD HEALTH AND WELL-BEING



Health and well-being

The University of the Sunshine Coast is active in researching a range of health and well-being issues that impact people across Australia and the world. This research is conducted across several centres and institutes, including the Thompson Institute, the Centre for Bioinnovation, the Centre for Human Factors and Sociotechnical Systems and the Australian Centre for Pacific Islands Research.

The Thompson Institute is focused on neuroscience research in the areas of dementia, suicide prevention, post-traumatic stress disorder and youth mental health. The Centre for Bioinnovation works towards development of drugs, disease diagnostics and therapeutics. The Centre for Human Factors and Sociotechnical Systems focus on areas of human factors, sociotechnical systems and systems thinking. The Australian Centre for Pacific Islands Research shifts the focus to the Pacific Islands region to study community-based nutrition and health. Though these centres and Institute are focused on working with industry and community, the University has many more research projects in the health and well-being field that are supported by government, industry and community partnerships and grants.

One example of a local project is the clinical trial for a new lymphoedema treatment started in mid-2021 by UniSC Clinical Trials, physiotherapist Jennifer McKenzie from the McKenzie Clinic, and Dr Hong Shue of the Sunshine Coast Haematology and Oncology Clinic. The study is focused on trialling a medication for those with lymphoedema secondary to breast cancer treatment and is open to males and females 18 to 80 years old. (SDG 3)

Another local study focused on a medicinal approach to treat chronic suicidality. UniSC's Thompson Institute published the findings of their study in early 2021 showing that oral doses of ketamine administered in a clinical setting could provide a rapid-acting treatment for chronic suicidality. Nearly 70 percent of participants found the treatment helped them to achieve a reduction in suicide ideation in the first six weeks. The oral method of delivery found similar success to the more traditional intravenous delivery route that carries a higher chance of adverse reactions. (SDG 3)

At a regional level, the University's research focus on healthy ageing has used the Sunshine Coast region as a test environment. UniSC partnered with the Sunshine Coast Regional Council in early 2021 to run a Healthy Ageing Forum, which was then followed in March 2021 by the online Sunshine Coast Health Symposium organised in conjunction with the Sunshine Coast Hospital and Health Service and Griffith University. The two-hour session on healthy ageing at the Symposium brought in topics of diet and nutrition, chronic disease, rehabilitation, exercise and managing older patients. This event was open to the public and provided an opportunity to present UniSC's healthcare research on ageing and related areas. (SDGs 3, 11, 17)



3 GOOD HEALTH AND WELL-BEING



11 SUSTAINABLE CITIES AND COMMUNITIES



17 PARTNERSHIPS FOR THE GOALS



At the state-wide level, the University partnered with WorkAbility Qld to study the impact of the National Disability Insurance Scheme (NDIS) on workforce patterns. The study led to a 2021 report, 'Strengthening Queensland's NDIS Workforce,' which provided 6 key recommendations. These recommendations included: development of industry-led and place-based approaches to support regional workforce planning and development; working with other jurisdictions to deliver a coordinated career promotion campaign linked to training pathways and job matching; development of a customised traineeship pathway in conjunction with the Queensland Government; state government investment in an action research project supporting the establishment of allied health assistant roles; state government working with other jurisdictions to capitalise on data sets that help guide future NDIS workforce policy planning and implementation; and improvement of accredited and on-accredited training. (SDGs 3, 17)

A more international focus can be seen in the \$6.9 million global research project, with UniSC as the only Australian partner. This project developed an IT-based monitoring and intervention platform to slow or reverse the progression of frailty – physical, cognitive and social – amongst older adults. The program, called MyAHA (My Active and Healthy Ageing), uses a wristband and surveys to track activity and identify patterns of change that indicate potential clinical changes in function. With this knowledge, interventions can be triggered in order to increase the ability of older adults to live at home for longer periods of time without the need for intensive support. (SDGs 3, 17)

From a mental health perspective, the University led a research project in conjunction with the University of New South Wales Canberra at the Defence Force Academy designed to assist veterans that face barriers adjusting to civilian workplaces. The study found that a range of issues often impacted veterans in their transition to civilian workers, including difficulty in understanding colleagues' roles without a uniform to rely upon and to explain how their military experience relates to the private sector. They often found their more regimented work style was hard to translate to more informal working environments, in particular in how they related to their colleagues. The findings led to the development of recommendations on how to make the transition easier, both for the veterans and for their civilian employers. (SDGs 3, 17)



Professor Denise Wood AM



SDG 15: Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.



Forests

The University of the Sunshine Coast's Forest Research Institute, which opened in March 2020, spans three research centres to investigate broad areas of forestry research, from conservation-based research to work with industry to regulations. The Forest Industries Research Centre is focused on the value chain within, and sustainability of, forestry-based industries. Another industry-specific centre is the National Centre for Timber Durability and Design Life, which is a joint collaboration between UniSC, the University of Queensland, the Queensland Department of Agriculture and Fisheries, Forest and Wood Products Australia and the Federal Government. The partnership focuses on creating coordinated research in timber durability and educating research scientists in the forestry industry. The Tropical Forests and People Research Centre is focused on the interactions between communities and tropical forests and covers the areas of Indigenous forestry, forest restoration, forest ecology and tropical silviculture.

One of the projects that has been launched through these centres is a study investigating the use of logging offcuts and treetops to create bioenergy and other bio-based products. The study, launched in early 2020, aims to reduce waste from log harvests in the Fraser Coast-based HQPlantations estate. Field testing and evaluation of supply chains will be used to identify opportunities to extract, process and deliver harvest residues, in order to be used by local industries. (SDGs 9, 15, 17)

Another project housed within the Institute and its centres is a \$3 million reforestation project in the Biliran province of the Philippines. The project works with local communities to select fast-growing tree species, promote high-quality seedling and nursery techniques and establish permanent local monitoring. A range of areas were planted with specific purposes, from food-based fruit tree and vegetable crop sections to timber sections to conservation sections. As of mid-2020 the project had restored 26 hectares in Biliran with a tree survival rate of approximately 90 percent. Added benefits include providing food for wildlife and stabilising landslide-prone slopes. Its success has led to adapted projects in 9 additional upland communities in the Philippines. (SDGs 2, 15, 17)



Dr Helen Nahrung



Wildlife and biodiversity

The University of the Sunshine Coast is based in areas of significant biodiversity and uses this location as a base for researchers to observe and study species in their natural habitats. The University's Centre for Bioinnovation includes a core focus on conservation and biodiversity research. This research theme includes the investigation of prominent challenges, such as the imbalance of key predator-prey relationships in the Great Barrier Reef, potential solutions for coral diseases, evolutionary genomics of iconic Australian species, and the development of effective biological control methodologies to treat pathogenic fungi that cause tree death.

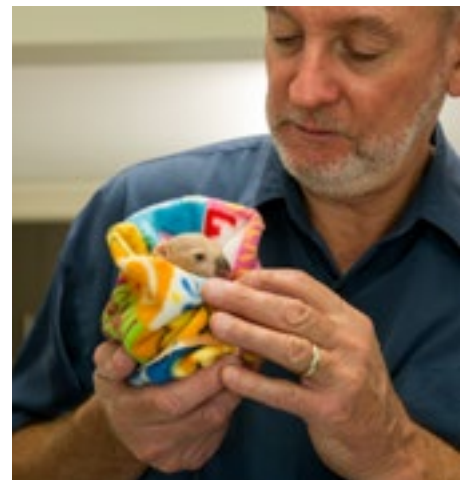
Dr Bonnie Holmes, Lecturer in Animal Ecology, was one of six Australian researchers to receive a 2021 Thomas Davies Research Grant. The grant is enabling her to gather detailed information on the biology and ecology of hammerhead sharks in South East Queensland in order to gain insights into the impact of harvest and export levels of the species that is currently in decline. Her study is tracking movements, using satellite tags, across estuaries and oceanic waters, with a specific focus on the great hammerhead sharks' presence in Hervey Bay and Moreton Bay. The study also includes the collection of tissue samples to genetically assess the hammerhead shark population structure across the broader Indo-West Pacific region. (SDG 14)

On land, Peter Timms, Professor of Microbiology, and his team are leading a Phase 3 rollout of a chlamydia vaccine for koalas which has been developed in collaboration with Australia Zoo Wildlife Hospital and other partners. The vaccination is being given to approximately 400 koalas and is hoping to ensure the long-term survival of koalas in South East Queensland and New South Wales, where chlamydia is present in over half of the koala populations. All of the koalas that receive the single-dose vaccine are being microchipped so that the Australia Zoo Wildlife Hospital can track if they return to the Hospital for any reason after their release. Support for this program has been far-reaching with funding and implementation assistance coming from all levels of government and a range of wildlife hospitals, field collaborators, an animal sanctuary, CSIRO Manufacturing and the Queensland University of Technology. The reach of this work has been expanded as it was featured in an interview with Prof Timms on the ABC TV Catalyst program episode, "Are We Killing Our Koalas?", which aired in early 2021. (SDGs 15, 17)

Another UniSC research project with a focus on koalas is the study of a natural antiviral medicine found in the leaves of South East Queensland eucalyptus trees. This natural medicine is being investigated for its ability to treat the koala retrovirus (KoRV), which has been linked to the development of cancers such as lymphoma and leukemia. The initial phase of the project has already identified local eucalyptus species with potential antiviral activity. The current phase is focused on studying koalas before and after they eat a natural, 'antiviral-rich' eucalyptus diet. Further chemical testing is being used to identify the specific molecules responsible for the antiviral activity in the leaves. This work, undertaken by Dr Quigley, Professor Peter Timms and Dr Sharon Nyari from UniSC, is a collaborative effort with Dr Ben Moore (Western Sydney University) and Paul Sprecher (Gympie Regional Council). (SDGs 15, 17)



Dr Bonnie Holmes



Dr Peter Timms



Detection Dogs for Conservation (DDC)

Mission: Working in partnership with community, industry and government to create positive change and effective ecological conservation for wildlife through the development, implementation and sharing of our expertise, knowledge and innovation technologies.

Detection Dogs for Conservation has been searching for koalas since its founding in 2015 by UniSC researchers Celine Frere and Dr Romane Cristescu. These searches, run in partnership with the International Fund for Animal Welfare (IFAW), have taken place across more than 5,000 hectares of land. The DDC team played a particularly important role in the wake of the 2019/2020 bushfire season, going into areas devastated by the fires to find koalas that were suffering from starvation, dehydration, and burns. They were deployed nearly every week following the bushfires and managed to find over 100 koalas struggling to survive. These koalas were then sent to local wildlife triage centres for medical attention.



Dr Romane Cristescu and Bear

Some stars emerged from their efforts with one of the dogs, Bear, gaining international attention from American actors Tom Hanks and Leonardo DiCaprio, and receiving an Animal Action Award from IFAW. Other dogs in the DDC family – Baxter, Maya and Billie – assist with koala detection, some focusing specifically on finding the freshest koala scats in an area. The DNA extracted from these scats can be used to map diseases and determine relationships between different koalas in a particular area. These dogs find evidence of koalas 20 times faster than humans and are 150 percent more accurate. The dogs have found a purpose, most coming from shelters. The same traits that mean they have been hard to place with a family – boundless energy and demanding of attention – are the ones that make them excellent Detection Dogs. (SDGs 13, 15, 17)

At the intersection of arachnids and insects is the study, led by Dr Volker Herzig, on arachnid venoms and their potential to develop pesticides that don't harm bees. The research study is focused on isolating a toxin that can lead to paralysis or death in caterpillars that eat crops without harming the bees that are responsible for pollinating those same crops. The complexity of the study is directly related to the complexity of venom, which contains significant levels of peptides within small samples. The possibility is extensive with the knowledge that Dr Herzig's collection of arachnid venoms is significantly larger than what commercial suppliers offer, with their supply approximately 20 percent the size of the University-based collection. (SDGs 9, 15, 17)



Dr Volker Herzig

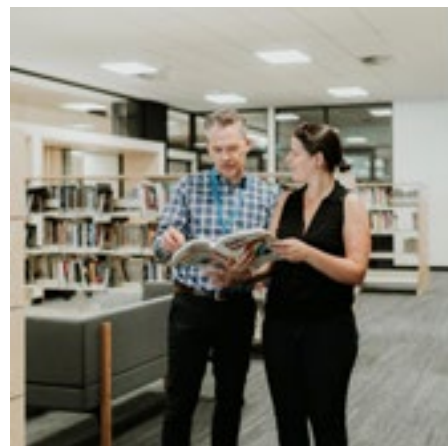


Operations

The University of the Sunshine Coast is committed to environmental and social sustainability that benefits students, staff, local biodiversity and the wider Sunshine Coast community. The University has an active program of initiatives that address the areas of energy use, the built and natural environment, water management, waste and recycling, and transportation. The Facilities Management (formerly Asset Management Services) team manages the operational aspects of energy, water, waste, transport and grounds services with a key focus on enabling these systems to be as efficient and sustainable as possible. The **2021-2024 Strategic Plan** incorporates this focus as the fifth of six goals: Build a contemporary, sustainable, accessible university.

Other UniSC departments also work towards that goal. People and Culture (formerly Human Resources) ensures that the social considerations inherent in sustainability and the Sustainable Development Goals are central to fostering a positive organisational culture. Financial Services, through its role in procurement and tendering, contributes to efforts to reduce waste and engage with businesses that have a similar commitment to social and environmental sustainability. Marketing and Communication, and Student Services and Engagement, also contribute to sustainability initiatives by promoting them and using their reach to engage staff, students and the wider community in sustainability efforts. These departments focus their work on the 4th (Empower communities to thrive through dynamic and productive partnerships) and 6th (Become a workplace of choice) goals within the Strategic Plan.

Of particular consideration in 2020 and 2021 was the emergence and prevalence of COVID-19. The coronavirus had significant impacts on the operational side of the University, with students attending lectures virtually and staff working from home at various points over the 21 months from March 2020. The social and environmental implications were varied and presented a steep learning curve to adapt to the ever-changing dynamics within the university sector. Although some benefits were actually felt – emissions from air travel nearly disappeared due to the inability to travel beyond Queensland state borders – other anticipated benefits failed to fully materialise. The biggest example of this was the expectation that students studying virtually and staff working from home would lead to a large reduction in energy needed to power HVAC and lighting systems across physical campuses. Unfortunately, the emergence of the coronavirus coincided with two years of La Nina weather that meant air conditioning was necessary to prevent outbreaks of mould in the increasingly humid and wet conditions. Fortunately, the use of technologies and strategies, detailed throughout this section, were able to generate reductions in emissions and improve social connections during these volatile years.



SDG 7: Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all.

7 AFFORDABLE AND CLEAN ENERGY



Energy

UniSC has enacted a range of energy saving initiatives since holding the first classes in 1996. These efforts include Smart Meters that monitor power and water usage across all buildings at the Sunshine Coast and Moreton Bay campuses, as well as across the Gympie, Caboolture and Fraser Coast campuses and the Thompson Institute. The information from these meters feed back into an integrated Building Management System (BMS) that enables the collection and analysis of real-time consumption. The BMS is also used to centrally control and optimise the use of those resources and the operation of the HVAC systems.

The UniSC Carbon Management Plan, launched in 2017 and due for an update in 2022, contains three pillars: management actions; engagement actions; and, abatement actions. The abatement actions focus on increasing the efficiency of the HVAC systems, reducing energy consumption and implementation of renewable energy solutions on University campuses and sites. This is being achieved through the replacement of existing lighting with more-efficient LED bulbs and low energy fluoro tubes. Over 50 percent of the lighting across all UniSC sites and campuses has been replaced in the 5 years since the goal of 100 percent efficient lighting was established. Upgrades to the HVAC system, including implementation of variable speed drives, optimisation of controls, and upgrades to the BMS have been undertaken in preparation for the 'water battery' in late 2019. These improvements have continued in 2020 and 2021 as the 'water battery' has been in operation.

The Energy Efficiency through Innovation (EEI) infrastructure, consisting of the 4.5-megalitre thermal energy storage tank (water battery), 2.1-megawatt solar PV array, new Central Energy Plant (CEP) with a solar roof and low emission refrigerant-based TRANE centrifugal chiller, and 4 Electric Vehicle charging stations has proven successful in making significant reductions to the energy-related emissions at the Sunshine Coast campus. In the 2020 and 2021 calendar years, the University was able to draw 6,486,706.7 kWh of energy out of a total of 19,276,664.01 kWh of energy from the EEI system. During the productive summer months, the system was providing up to 46.5 percent of daily energy usage. That represents an average of 33.65 percent of energy being drawn from renewable sources and an emissions savings of over 6,000 tonnes CO₂-e over two years. (SDGs 7, 9, 11, 13, 17)



Water battery at UniSC Sunshine Coast campus



SDG 9: Industry, Innovation and Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Built environment

An interesting contrast is emerging in the network of UniSC campuses. With the emergence of the Moreton Bay campus the evolution of ecologically sustainable design (ESD) is apparent in the structural differences between the new Moreton Bay Foundation Building and the buildings on the Sunshine Coast campus.

The Sunshine Coast campus buildings focused on open atriums and breezeways to make use of natural ventilation, cooling sea breezes and strong westerly winds. The Moreton Bay Foundation Building is a closed building with different methods, as shown in the feature box, for controlling and circulating air flow. However, some design features have been successfully employed at both campuses. The primary example of this is the use of glazed windows with louvres, screens, sun shelters and landscaping to take advantage of the light while avoiding peak sun heating.

Additional improvements have been made to the built structures at other sites. At the Sunshine Coast campus the **Art Gallery** was redeveloped and a new **Creative Industries precinct** building, complete with recording and collaboration studios, a makerspace/fablab and a multi-mode performing arts space, was opened in 2020. These spaces have led to opportunities for students and the wider community to gather and enrich their minds. The Art Gallery, in particular, has been a key space for local and Indigenous artists to showcase their work.



The University has made contributions within its Fraser Coast regional presence. The University opened a **laboratory** at its Fraser Coast campus in late 2020 that is dedicated to meet the needs of ecological research on aquatic species. The retrofitted laboratory centre includes specialist equipment for genetic and stable isotope tissue sample analysis that is critical to better understand local wildlife, including whales, turtles and fish species. The lab will also enable the researchers to perform necropsies (animal autopsies) to better understand the types and scale of threats facing these marine species.

Within the Fraser Coast region, the University also has a presence on K'gari, Fraser Island, with its Research and Learning Centre in Dilli Village. Beyond the facilities at Dilli Village, UniSC staff and students have contributed to the development of a new interpretive centre on K'gari (Fraser Island) in early 2021, designing and compiling panels to explain how wind, sand, water and plants interact to create the island's unique ecosystem. UniSC staff also created a free app, **K'gari Fraser Island Guide**, to serve as a comprehensive exploration guide for visitors, students, and researchers. The **K'gari World Heritage Discovery Centre** is located on the grounds of Kingfisher Bay Resort and was a joint initiative between the University, SeaLink Fraser Island, the Butchulla Aboriginal Corporation and the Fraser Coast Regional Council.

UniSC has committed to play a role for many years to come by hosting a symposium in late 2021, **The K'gari Research Symposium: Towards 2050**. The symposium brought together the island's traditional custodians, the Butchulla people, with environmental groups, researchers, students and other stakeholders at the University's Fraser Coast campus to identify key research opportunities, partnerships and collaborations for the management of the island. An emphasis was placed on sharing knowledge and listening to multiple viewpoints and setting the discussions around the understanding of K'gari's ecological, biological and geological evolution and the culture of the Butchulla people. The Symposium led to the identification of **general principles** for future-proofing K'gari, including ensuring Butchulla involvement, adopting a co-management approach, developing tourism opportunities that are respectful, basing solutions in scientific knowledge and continuing to secure government support.



UniSC Moreton Bay campus and Foundation Building

The expansion of the University of the Sunshine Coast was sealed with the opening of the Foundation Building on the new Moreton Bay campus in Petrie, Queensland on 9 March 2020. The nearly-17,000 m² building is the first in a series of teaching facilities that will be established on this site, which was once home to the historical Petrie Paper Mill. The development of the campus is happening in conjunction with The Mill at Moreton Bay Priority Development Area (PDA) Development Scheme. The UniSC campus will be the anchor of The Mill Central, an urban centre designed to drive development and attract businesses and families to the area. Other pieces of the PDA include an Innovation precinct, an Urban centre, Transit linkages and The Mill Green, which incorporates community and conservation spaces.



The main driver for expansion into this region is that its residents have been underserved in terms of access to tertiary education facilities. The closest universities were located in and around the City of Brisbane, which meant a 40 minute – 1 hour commute by car or public transport each way for many of the residents. The regional focus of UniSC was a strong fit for the development a university presence in Moreton Bay, and the focus on degrees in health, business, computer science and engineering has led to an influx of local students, many of whom are the first in their family to attend university.

One of the key factors that drew the University to the specific location within the Mill Central was its proximity – right across the street – to the Petrie Train Station and the cycleway that abuts the rail line. Minimal parking spaces have been located on the campus in an effort to push staff and students to use public and active forms of transport for their commutes. Facilities, including an end-of-trip bike storage area with lockers and showers, have been incorporated into the building in order to support those people who actively commute to campus.

As ESD has been a staple of the development of the University from its inception, this continued with the new campus. Additional sustainability features of the Moreton Bay Foundation Building include a series of building design, water savings, and waste streaming efforts to reduce environmental impact, including:

- **Building design:** The multi-storey open air Rise section pumps the air conditioning from the floor, reducing the amount of energy needed to cool the area. Multiple air handling units cool air in various zones, which are controlled through the BMS, which allows for greater precision when particular areas of the building are not in use. The windows are double glazed to increase insulation properties. The building materials are recycled or sustainably sourced wherever possible. Energy efficient lighting is used throughout the building.
- **Water:** a 110,000 litre rainwater tank feeds the grey water system throughout the building and services landscaping needs. The link between water and waste is found in the use of an eWater cleaning system that applies an electrical charge to a mix of salt and tap water to produce 2 solutions for cleaning (alkaline) and sanitising (acidic). This utilises refillable spray bottles, reducing plastic waste, saving money on purchase of chemicals and leads to health and safety benefits as the solutions do not produce odours or gases.
- **Waste streaming:** 4 streams of waste (compost, comingled recycling, paper/cardboard, landfill) are incorporated into waste collection sites throughout the Foundation Building, with colour-coded bins that clearly illustrate what belongs in each stream. Although there is only one food and beverage provider on campus, they use compostable cups, containers, plates, bowls and cutlery. In keeping with University-wide policy, no single-use plastic water bottles are sold on campus; rather, free chilled water refill stations are located on every floor.

Finally, the location of the campus allows for UniSC' students to engage in hands-on research, such as the University's Endeavour Veterinary Ecology (EVE) program, which has been working with the local Council and the Queensland Department of Transport and Main Roads to run the Koala Management Project. This project is monitoring 104 of the estimated 145 koalas in the area and is further implementing efforts to target management of wild dogs and vaccination trials. To date the program has seen a 20 percent expansion of the koala population per year. (SDGs 4, 9, 10, 11, 12, 13, 17)

Natural environment

The natural environment has played an important role in the identity of the University of the Sunshine Coast. The University's Sunshine Coast campus is a flora and fauna reserve spread over 100 hectares. The campus adjoins the Mooloolah River National Park and our waterways flow into that park. It is common to see wildlife across the campus, including kangaroos, possums, ibises, waterfowl, snakes, reptiles and gliders. The commitment to protecting the natural state of the environment extends to our designation as a **Land for Wildlife** member. This designation commits the University to maintaining the campus in a native state to create a habitat for the local wildlife. The University also maintains a series of nest boxes across its Sunshine Coast campus. The most recent 2021 audit of these nest boxes showed that 81 percent of the nesting boxes were in use, for a total of 60 occupied nest boxes, by six native mammal, insect and bird species (ie, possums, gliders, rainbow lorikeets, native bees, wood ducks and microbats).

In order to properly maintain the habitat in a bushfire prone area the University participated in regular prescribed and controlled burns in accordance with an Ecological Fire Management Plan. Though these are often conducted every four to eight years, they were conducted back-to-back in 2020 and 2021 due to active fire seasons in the prior years that diverted resources and delayed University burns. The most recent **prescribed burn** took place in September 2021 in a section of UniSC's compensatory habitat site at the Sunshine Coast campus. These burns have been conducted by Queensland Fire and Emergency Services and have been designed to help reduce the intensity of future wildfires and to regenerate the forest.

The Moreton Bay campus makes up a part of the wider **The Mill at Moreton Bay Priority Development Area (PDA)**. Though the campus has a minimal external footprint, the University's researchers and staff engage with the Moreton Bay Regional Council and The Mill organisers to ensure the PDA's natural areas provide a healthy environment for native wildlife. These efforts include efforts to vaccinate koalas against chlamydia, as detailed previously in this report. The Mill will include approximately 110 hectares of conservation and koala habitat and, with the support of the UniSC researchers and students, this area has already seen a rebound of the health and population of koalas in the area.



UniSC manages Dilli Village on K'gari (Fraser Island) as a research and study resource for University students and researchers, schools and the public. The K'gari Research and Learning Centre provides accommodation and access to field study sites for students pursuing Outdoor Environmental Studies, Coastal and Marine Ecology, Sustainable Tourism, Leisure and Event Management, and other planning, environmental management and governance subjects. As the entire island is a National Park and World Heritage site, the University manages the land with sustainability as the main driver. This includes minimal impact structures, fencing to keep the native wildlife protected from the visitors and strict waste management practices, including the requirement for visitors (including students and researchers) to take all of their rubbish with them when they leave K'gari. This commitment protects the native wildlife and prevents the rubbish from entering the pristine natural inland lakes and streams or the surrounding marine waters.

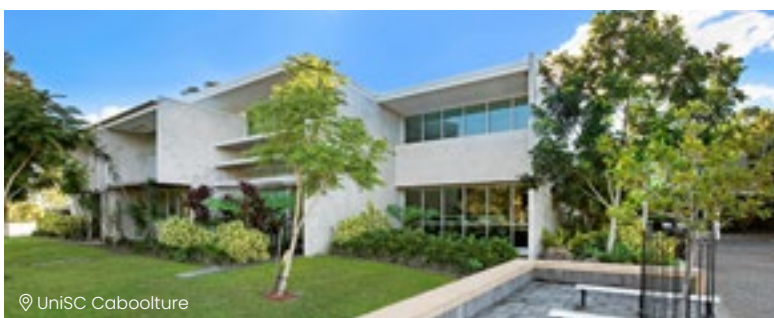
UniSC's campuses at Fraser Coast, Gympie and Caboolture are run in conjunction with the Fraser Coast Regional Council and QLD TAFE, respectively. These campuses include minimal external footprints and natural environments, though the landscaping that does exist aligns with the Campus Master Plan guidelines requiring planting of natives and environmental landscape management.



UniSC Fraser Coast



UniSC Gympie



UniSC Caboolture



SDG 6: Clean Water and Sanitation

Ensure availability and sustainable management of water and sanitation for all.

6 CLEAN WATER AND SANITATION



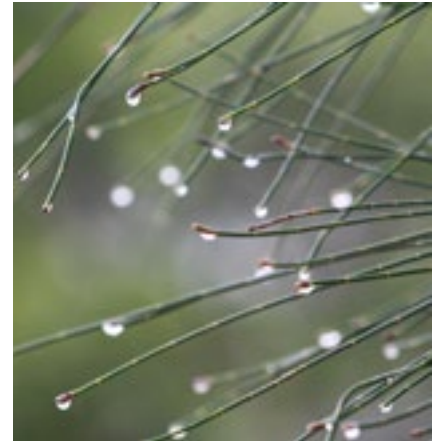
Water

The University of the Sunshine Coast, with campuses that are in close proximity to the coast, have committed to protecting the health of local waterways in its operations and through its research focus. UniSC has also consistently sought to use resources, including water, in a sustainable and responsible manner. This translates to a range of actions and initiatives.

The flagship Sunshine Coast campus of UniSC is the low point in the Sippy Downs Catchment Area. During any rainfall event, water from the catchment flows into the two lakes on campus through a series of planned swales and streams that provide an initial natural filtration system. The campus lakes, with a joint storage capacity of 130,000,000 litres of water, serve the same function as rainwater tanks, with the added benefit of providing a natural habitat for a range of birds, reptiles and waterfowl. The water within the lakes is used across the campus in two ways. Untreated water is pulled from the lakes to irrigate the grounds, watering the campus and sporting fields. Treated water is drawn from the lakes to feed the central energy plant and cooling towers, as well as to use as make up water in the pools. The process for pulling water from the lakes uses a low velocity screened intake method so that flora and fauna are unharmed by the extraction process. Once within the treatment plant the water feeds through water pumps, holding tanks and multiple filtration systems. Routine water quality testing is performed to detect biological contamination and to ensure the water poses no health and safety risks. The Sunshine Coast campus also hosts a 5,000-litre underground rainwater tank that feeds into the grey water systems for the adjoining building. Between the lakes and the rainwater tank, over 52 percent of the water used on the campus in 2020 and 2021 was recycled.

As the University's Moreton Bay campus does not have the space available for implementing a similar lakes and watershed system as the Sunshine Coast campus, UniSC has used more straightforward methods for capture and reuse of water. The Moreton Bay campus houses a 110,000-litre tank to capture rainwater and feed it into the grey water systems of its foundation building. A similar system is planned for the buildings set for development in 2022 and 2023. The recycled water from the rainwater tank represented over 22 percent of the total water use at the campus in 2021.

Across all campuses, whether fully owned or leased, UniSC has design standards and guidelines that establish water conservation standards, such as Australian Water Efficiency Labelling and Standards (WELS) rated fixtures and fittings. This includes requirements to use 6-star taps, 4-star dual flush toilets, 6-star low flush urinals and showers with a maximum resultant flow of 9-litres per minute. To encourage the users of the facilities to conserve water, signs are used in conjunction with these efficient fixtures and fittings to encourage them to turn off taps and report leaks.



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



14 LIFE BELOW WATER



15 LIFE ON LAND



The University recognises that water is a valuable resource. Additional water-related sustainability initiatives are focused on protecting the health of the waterways and natural environment rather than reducing the use of water. UniSC is a **Water Refill campus** that continued its commitment to not sell single use plastic water bottles in 2020 and 2021. To support this initiative the University offers free water bubblers and chilled, filtered water refill stations across all of its campuses. This effort provides free access to water to all University staff, students and visitors while reducing plastics that can end up polluting the local waterways.

Another water-based initiative that targets a reduction in plastics is the eWater system in use at UniSC owned campuses. eWater is a system that produces two solutions through electrolysis. By using tap water and ordinary salt and applying an electrical charge an alkaline and an acidic solution are produced. The wall-mounted eWater unit is simple, with one unit being able to easily produce enough solution to clean and sanitise the entire campus. This system has been in place for several years and has provided environmental, economic and health benefits for the University and its cleaning and waste management contractors. Economically it saves the University money from having to purchase expensive chemicals. Environmentally it reduces the amount of plastic the University consumes as the solutions are fed into refillable spray bottles, eliminating all the plastic bottles that the store-bought cleaning solutions come in. Health-wise the eWater solutions are odourless and produce no fumes, which means it is safer for cleaning staff to use and there is no hazardous waste generated if the solutions spill. There was a period in 2020 when UniSC's cleaning and waste contractors had to halt the use of eWater due to the COVID-19 pandemic, but once eWater received TGA approval later in 2020 the University resumed its use.



SDG 12: Responsible Consumption and Production

Ensure sustainable consumption and production patterns.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Waste

Beyond the physical design of the built and natural environment of the UniSC campuses, the longest running sustainability initiative at the University has been its commitment to total waste streaming which was put in place in 2013. The University of the Sunshine Coast has been streaming the waste generated by its staff, students and visitors into four main streams – landfill, compost/organic, co-mingled recyclables and paper/cardboard – since that time. In 2021 a fifth stream was added – Containers for Change – which provides the University with ten cents for every refundable, recyclable drink container that is disposed of in this stream. The University then passes on 100 percent of that money to charity; in 2021 that was Detection Dogs for Conservation. In order to encourage correct use of the waste streams, UniSC staff are not provided with under desk bins which forces them to use the streaming bins in the communal areas to dispose of their waste. The bins across all campuses are colour-coded and include photos of the waste products that are found on campus; these photos come from the annual audits the University's cleaning and waste management contractors conduct. Those contractors collect the waste from external bins one stream at a time during operating hours so that the staff and students can see that each stream is kept separate.

The main focus of UniSC's waste streaming – onsite processing of organics through the On-Site Composting Apparatus (OSCA) – saw some challenges in 2020 and 2021. The COVID-19 induced shift away from campus – staff working from home and students studying from home – meant that the amount of organic waste was significantly reduced. OSCA did not have enough waste to operate and for the first time since 2013 had to be shut down. Efforts were made to bring in organic waste from the local supermarket in late 2020, which allowed the University to restart OSCA before the students had fully returned to campus and, as a result, it was in operation for 2021. Another challenge which has emerged over the years as the University shifted more and more of its food and beverage containers (ie, cups, plates, bowls, cutlery) to compostable options was the abundance of dry organic matter. As OSCA works best with a good balance between wet and dry organic waste, the University producing an imbalance in favour of dry waste meant that UniSC had too much to feed into the onsite composter. The Queensland Single-Use Plastics Ban that took effect on 1 September 2021 drove the amount of compostable packaging, and thus dry organic waste, up on UniSC campuses. However, the University organised an expansion of the compostable waste stream to include off-site processing of this dry organic waste at a local compost business, starting in the second half of 2021.



6 CLEAN WATER AND SANITATION



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



14 LIFE BELOW WATER



15 LIFE ON LAND



17 PARTNERSHIPS FOR THE GOALS



The commitment to the composting stream was also expanded to the new Moreton Bay campus. Though the single-building campus has only one café and generates relatively low levels of organic waste that waste is still captured and sent offsite for composting with a local business. The volume of organic waste has been captured and will be monitored in order to understand when onsite composting will become feasible for the Moreton Bay campus.

Beyond these main streams, the University has been working to expand its recycling streams for business and academic related waste. Battery, metal, confidential and electronic waste recycling continued to be collected in 2020 and 2021. Alongside the new offsite organic waste processing, UniSC started to collect clear soft plastics for recycling in the second half of 2021. Factoring in all of these recycling and composting waste streams, the University managed to recycle over 48 percent (53,395 kgs of a total 127,485 kgs) of its waste in 2020 and over 54 percent (138,609 kgs of a total 253,723 kgs) of its waste in 2021. The slightly lower percentage, and significantly lower volume, in 2020 was due to the shut down of OSCA and lower recyclable waste being generated as a result of COVID-19 closure of campus facilities.

These figures do not encompass clinical waste, which was also tracked and processed according to hazardous waste guidelines. Efforts to minimise clinical use include the recycling of supplies used in the medical (nursing and paramedicine) courses that do not fall within the hazardous waste regulations. This includes the repackaging of medical supplies including gauze, bandages, saline IV bags and medicine bottles. Beyond the environmental benefits of reusing these supplies, the reduced costs from their reuse provides the University students with extra opportunities to practice their patient skills.

Beyond the efforts of the Nursing and Paramedicine academics to recycle learning supplies, other academics and researchers have been engaged with waste reduction projects. Nearly thirty UniSC academics and undergraduate students worked with Nepalese communities and organisations in 2020 to develop strategies to manage plastic waste. The **multidisciplinary work** involved science students to prepare scientific reports for governmental organisations, engineering students to design waste reduction and recycling solutions, business students to identify microbusiness opportunities using recycled waste, and education students to develop informational resources for the local schools and communities. This project was made possible by the Government’s New Colombo Plan Mobility program.

The research work by academics across the University highlights the need to continue UniSC’s efforts to reduce waste in order to protect valuable local species. A 2021 study by University researchers identified a marked increase of plastics and parasites in nests over recent decades by examining 892 Australian bird nest specimens dating from 1832 to 2018. Synthetics weren’t found in the nests until 1956 while approximately 25 percent of nests contained synthetics by 2018. A UniSC study, beginning in late 2020, has been examining the **impact of microplastics on Australia’s marine turtles**, specifically looking at the toxicity of the particles and how exposure to the particles directly affects turtle health. Given recent research by UniSC academic Dr Kathy Townsend and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) showing a turtle faced a 22 percent chance of dying if it ingested a single piece of plastic, this study has been designed to examine multiple green sea turtle populations from Lady Elliott, Heron and Stradbroke Islands, Gladstone Harbour and Moreton Bay to determine what role environmental pollutants that bind to the biofilm coating on plastics plays in turtle health, drawing distinctions between populations from protected and pristine habitats versus more populated and polluted habitats.

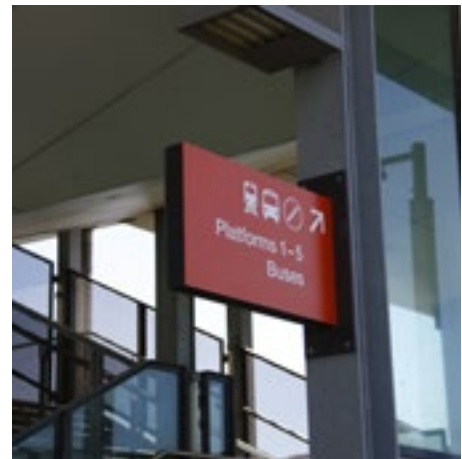


Transport

The emergence of COVID-19 in 2020 and its spread in 2021 impacted the transportation and travel options for UniSC students and staff. The border closures across and beyond Australia lead to considerable emissions savings from the reduction in air travel. The shift to working and studying from home led to a significant reduction in the University's commutes. Despite this, UniSC continued with popular transport related initiatives, including offering services for cyclists (ie, end-of-trip facilities, bike clinics) and charging stations for electric vehicle owners. Though numbers were down on public transport in the Sunshine Coast area thanks to the pandemic, many students and staff still opted to use the Petrie train station right across from the new Moreton Bay Foundation building. The University continued to operate its free express shuttle service during the school terms, with the exception of times when lockdowns were imposed.

Operationally, the commitment to buy hybrids when replacing fleet vehicles continued. The fleet management staff at the University encouraged staff to ride share when booking fleet vehicles and changed the booking forms to reflect this option. The award vehicle policy was also shifted to a novated lease program that included sustainable options, such as hybrid vehicles.

These operational commitments to sustainable forms of transportation were echoed in research partnerships and projects that were established. In 2020, a **research project** to examine the risks facing cyclists on the roads commenced and was funded by the Australian Government's Road Safety Innovation Fund. This project was designed to develop, trial and implement the Cyclists Report of Incidents Tool (CRIT), an online cyclist incident reporting and learning system. The risks identified through this project will be used to develop interventions to enhance cyclist safety and behaviour. In 2021, UniSC and the Queensland Government's Department of Transport and Main Roads formed a three-year **Transport Academic Partnership** to prepare the state for future, more sustainable transport modes. A foundation Chair of Sustainable Transport Engineering position was created for UniSC's Moreton Bay campus. That campus will be a field site to test these emerging transport ideas. (SDGs 9, 11, 13, 17)



Procurement and tenders

The development of the Moreton Bay campus has highlighted the need to ensure the University's contractors are as committed to sustainability as UniSC is. The key to many of the University's sustainability initiatives have been selecting partners that have strong environmental and social values. In order to ensure that UniSC engages with and hires the right partners, the tender and procurement processes incorporate sustainability criteria and guidance that is weighed in line with other criteria such as cost and experience. These criteria are present in two main documents: Sustainability Contract Provisions and Sustainable Purchasing Guidelines.

The Sustainability Contract Provisions set out six overarching concepts to consider when selecting a contractor: materiality and completeness; timeliness; reliability and comparability; clarity; accuracy and balance; and stakeholders. It provides a series of recommended sustainability actions for contractors based on the Triple Bottom Line pillars:

- Environmental: These factors focus on the contractor's behaviour, steps they take to verify their actions and commitments and how they address or manage biodiversity, chemicals, efficiency, recycling and waste.
- Social: These factors focus on the contractor's behaviour, how they engage key stakeholders and the community, their level of transparency, how they address or manage human and labour rights and the steps they take to verify these actions.
- Economic: These factors focus on their partnerships, how they identify and address risks and whether they measure cost using whole of life/ lifecycle costings.

The Sustainable Purchasing Guidelines can be used by staff when preparing to purchase a product or service. The Guidelines include:

- A section examining why and whether the product/service is needed;
- A chart that allows staff to compare three models across a range of criteria (ie, star ratings, life expectancy, price, maintenance, risks); and,
- Guidance on how to evaluate the sustainability of products/services based on what the products use (ie, fuel, energy, water, packaging), the human resources necessary (ie, delivery, installation, training, maintenance), relevant certifications, risks (ie, biodiversity, staff) and issues that affect the life and cost of the product.

These guidelines and provisions were used for large-scale projects, including the tenders for a waste and management contract, and architects and builders for the next stage of development at Moreton Bay. (SDGs 9, 12, 13, 16, 17)



SDG 2: Zero Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

2 ZERO HUNGER



Retail, eateries, venues and catering

A key operational service for UniSC staff and students is the provision of food and drinks. The Venues and Catering team operate a café and refectory on the Sunshine Coast campus and manage the catering for events held on University campuses. The team has made commitments to sustainability, opting for sustainably sourced ingredients where feasible and locally sourced products. They have also been active in reducing the waste generated and shifting packaging, cups, plates, cutlery and bowls from recyclable plastics to compostable packaging. This commitment is also required of each campus' food and drink outlets.

A key sustainability initiative for the University has been the commitments not to sell single-use plastic water bottles and to encourage the reduction of waste through the use of refillable containers. The refillable containers that are encouraged across campus are:

- Refillable water bottles: Water refill stations and chilled, filter water refill stations are located across every UniSC campus and provide free access to drinking water.
- BYO reusable cups: Keepcups and other refillable drink containers have been accepted at nearly every café on our Sunshine Coast and Moreton Bay campuses. This was halted in the initial stages of COVID-19 due to health and safety considerations but returned using a contactless pour option in 2021.
- Borrow ware: Ceramic mugs have been available for use in UniSC-run venues in 2021, initially using a contactless pour option, for those staff and students that forgot their BYO cups. These were available to use in the venue, as well as to take back to an office, classroom or study area.
- Providing 15L bulk water at events for refillable purposes, or for use with glasses supplied.
- Sale of resealable and refillable water options (bottles and cans) from the UniSC outlets.

The Venues department emails Green Event Tips and a summary of sustainability initiatives at the University to external enquiries to encourage their adoption of sustainable habits. All events UniSC hosts are looked at individually to assess where sustainable options can be employed; bulk catering rather than individual packaging, reusable crockery and cutlery, the need for separated bin options during the conference or event, and group transport options are encouraged. Electronic signage in the foyer of the auditorium reduces the need for paper and laminated signage on arrival.

Beyond the environmental impacts of reducing waste, the Venues and Catering team ensure that the food and drinks served are affordable for students. Through the Student Services Amenities Fee scheme, the UniSC-operated retail outlets offered discounted meals for students who showed their UniSC student card at the time of purchase. In 2021 this translated to over 80,500 items (ie, fruit, sandwiches, salads, hot meals, soup). The value of these subsidised food offerings was a savings of over \$230,000. (SDGs 2, 10)



2 ZERO HUNGER



10 REDUCED INEQUALITIES



Engagement

Healthy UniSC Initiative

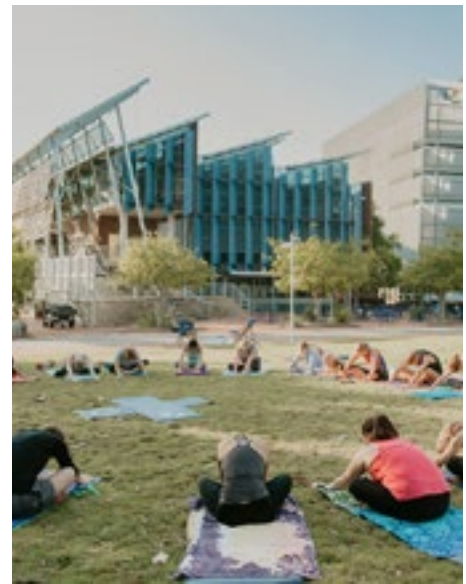
The University of the Sunshine Coast developed the **Healthy UniSC initiative** in 2021 to support the health and well-being of its students and staff. This initiative aligns with the **Okanagan Charter, An International Charter for Health Promoting University and Colleges**. The Charter calls on universities to embed health into all aspects of campus culture and to lead health promotion action and collaboration locally and globally.

The focus on students rests in the Student health and Well-being Strategy. The Strategy focuses on building a healthy environment in which students can live and learn. The six overarching principles of the Strategy fall within the Australian University Mental Health Framework of protect, support and promote mental health and well-being and include:

- Foster an anti-bullying culture, address risks of self-harm, increase protective factors and combat stigma;
- Promote a sense of safety, belonging and identity with UniSC within connected, resilient and trauma-informed communities;
- Provide and promote access to a range of health and well-being supports and resources that are responsive, flexible and intentional;
- Enable flexible systems, processes and practices for students to access the right support at the right time;
- Intentional early intervention, promotion and capacity building of positive mental health; and,
- Support healthy people, places, policies and practices.

UniSC programs that align with these principles include support systems for international, Indigenous and disabled students, support for student clubs and social activities, counselling services, and awareness raising and well-being events and campaigns (R U OK? Day; Respect. Now. Always).

The focus of the Healthy UniSC initiative on staff includes mental health awareness training, a staff well-being and counselling program and free flu vaccinations. Many of the programs under the initiative are designed with the health of both staff and students in mind, with a smoke-free policy, public and active transportation options, access to free nutrition and dietetics sessions, access to sporting and fitness facilities, and policies to value diversity and protect against sexual harassment, discrimination and bullying. (SDGs 3, 5, 10)



COVID-19: Impacts

One of the biggest factors that impacted sustainability in 2020 and 2021 was the emergence and spread of the COVID-19 pandemic. The pandemic significantly impacted the way we all lived and worked, and it impacted the way we managed our sustainability initiatives, as well. From a sustainability perspective, COVID-19, and the response to it, led to both positive and negative environmental, social and economic impacts.

Environmental impact

Positive environmental impacts included reductions in emissions related to transport/commutes and travel as students and staff moved to study and work from home and attend meetings virtually, and a drop in the total amount of waste produced on campus due to the reduction of staff and students on campus. Anecdotally, the wildlife on campus seemed to enjoy the added space and control they had over the Sunshine Coast campus. However, negative environmental impacts included a reduced level of waste that could be recycled as health and safety precautions meant more waste entered the landfill stream than our recycling streams, as well as a shift away from using natural cleaning and sanitising solutions to commercial-grade chemicals. The savings the University was hoping to achieve regarding energy use were hampered by a La Nina year that led to humid and damp conditions during the time that staff and students were home; therefore, the air conditioning had to be maintained to prevent the development and spread of mould. Some energy reductions were still achieved through reduced lighting needs.

Economic impact

The pandemic led to economic impacts across Queensland, Australia and the world. It hit the tertiary education sector quite hard with the sector's reliance on international students. The impact of that reduction in international students was not fully felt in 2020 and 2021 as many international students were already in Australia at the start of the pandemic. However, it will continue to be felt for the next few years as new international students were unable to start in 2020 mid-year or in 2021 given Australia's closed borders. Additional costs for the University emerged due to the need to comply with health and safety regulations, including the purchase of cleaning chemicals and increased frequency of cleaning schedules. Though not necessarily a positive or negative, the pandemic hastened the shift the tertiary education sector was already dealing with in regard to providing more flexibility in how courses and lectures are delivered. Securing the technology to implement some of the online content was not an unexpected cost, but it was likely compressed into a shorter period of time. The pandemic also impacted the ability to move goods, which impacted the University in terms of being able to source building materials and other operational goods in a timely manner.

Social impact

Positive social impacts included an increased focus being placed on mental health and an increased level of support being provided for those in need. Negative social impacts included increased levels of isolation and mental stress. A wide range of programs were made available through University researchers and staff to assist other staff and students who struggled during the pandemic. These efforts are detailed in the next section on COVID-19 response.

COVID-19: Response

The University of the Sunshine Coast was significantly impacted by the COVID-19 pandemic. However, with a strong research and academic focus on health, in particular mental health and clinical trials, the University was able to use its resources to make a positive impact upon its staff, students and the wider community. UniSC was also able to leverage its partnerships to enhance its social and environmental responses to the pandemic.

Mental health (SDGs 3, 11, 17)

UniSC's Thompson Institute ran an eight-week preventative program in mid-2020, EMERALD, to support Queenslanders' mental well-being. The program, which through Queensland Health funding was free to participants, included one-on-one telehealth appointments and online educational resources designed to help people act at the earliest signs of depression, loneliness or anxiety before they worsen. EMERALD Participants reported increases in their well-being of up to 52 percent upon completion.

The UniSC Counselling and Well-being Clinic partnered with ComLink, an aged care health and well-being provider, to offer the **Tele-Friends program** to isolated older individuals facing visitor restrictions during the pandemic. The program, staffed by final-year students supervised by qualified clinical counsellors, established regular times for the students to call the older person each week to help them reconnect with their strengths and relate positive experiences.

Another program run through the Thompson Institute that was of particular importance during the COVID-19 pandemic was iHelp. Though the iHelp digital tool had been in place since late 2019, it became incredibly relevant in 2020, being accessed nearly 1,000 times between the time COVID-19 restrictions were put in place and mid-2020. The tool curates mental health and suicide prevention services in the Sunshine Coast region and offers the information through a **webpage** and downloadable iOS and **android** app.

The University hosted a webinar, "Physical and mental health during COVID-19", during Queensland's Mental Health Week in October 2020. The webinar, part of a series titled 'Research Unmasked,' focused on providing information about mental health and well-being impacts of the pandemic, the role of exercise, and strategies and initiatives to help people support themselves and others. It featured three UniSC panellists: UniSC Senior Lecturer in Psychology Dr Rachel Sharman; Professor of Youth Mental Health and Neurobiology Dan Hermens; and Lecturer in Applied Science Dr Dan Wadsworth.

Clinical trials (SDGs 3, 17)

UniSC Clinical Trials conducted several trials associated with the COVID-19 in 2020 and 2021. These included:

- An **August 2020** trial to determine the optimal dose and safety of the Novavax COVID-19 vaccine. The study required healthy 18 to 84-year-old non-smokers to attend the clinic six times over seven months.
- A **September 2021** trial of a vaccine that combined the **Novavax COVID-19 vaccine with NanoFlu™**, an influenza vaccine candidate. The trial was run at the University's SouthBank, Moreton Bay and Sunshine Coast clinics. The trial focused on the level of immune response of participants to the combined vaccine versus receiving the individual vaccines.
- A **May 2021** study of a needle-free vaccine delivery technology, HD-MAP, the high-density microarray patch in collaboration with Vaxxas, an Australian biotechnology company. Though the study focused on the safety and tolerability of a measles and rubella vaccine delivered through HD-MAP, its success could have implications for COVID-19 vaccinations.



COVID-19: Response

Environmental management (SDGs 6, 9, 12, 14, 15, 17)

UniSC marine biologist Dr Kathy Townsend joined forces with archaeology and social policy academics around the globe to study and highlight the impact of the pandemic in terms of the increased levels of pollution. The health and safety regulations and consideration that led to single-use items (ie, face masks and other personal protective equipment) resulted in increased pollution that was making its way into the marine environment. The study utilised social media to examine over 18,000 images of marine debris worldwide and found that as the understanding of the virus shifted from one of direct contact to an airborne transmission the debris shifted from gloves to face masks.

UniSC's long-time waste and cleaning contractors, Biniris, won three 2021 Excellence Awards from Building Service Contractors Association of Australia Ltd (BSCAA). The three awards included two that were specific to their response to COVID-19: Excellence in Management to COVID-19 – Individual (Awarded to Joy Dillion, the full-time onsite administrator for UniSC) and Excellence in Management to COVID-19 – Company. Their third award – Environmental Best Practice Award (Company) – built on their work with other sustainability initiatives at UniSC.

Free assistance (SDGs 1, 2, 3, 10, 17)

The University provided free, ready-made, nutritious meals to domestic and international students at its six campuses in partnership with Study Brisbane, Study Sunshine Coast, Urban Angels Community Kitchen and Foodbank Australia's FareShare program. This was particularly important for international students that didn't qualify for any of the Australian welfare programs. UniSC also provided emergency bursaries of up to \$1,000 to more than 1,360 students to help them offset some of their hardships from the coronavirus lockdowns.

The University's clinical psychology student cohort offered a free program, Coping Kids, to help families with children aged 2 to 17 cope with the changes brought about by home schooling. Coping Kids provided support through phone and Zoom video conferencing, teaching specific strategies to parents to manage their children's anxiety and emotional reactions.

UniSC brought in Sunny Street, a local health provider, to establish a vaccination clinic on its Sunshine Coast campus. The clinic opened in September 2021 and offered free vaccinations for University students, many of whom were required to receive a vaccination as a condition of their work placements.

Economic impact (SDGs 9, 11, 17)

UniSC's School of Business partnered with Innovate Moreton Bay in 2020 to investigate business resilience and innovation during the pandemic amongst entrepreneurial firms. The study looked at how business owners and managers adapted their business models, many increasing their online engagement. The successful examples could then be promoted in the #MoretonBayTough campaign run by the Moreton Bay Regional Council and Moreton Bay Region Industry and Tourism.



Mental health

The University of the Sunshine Coast has set a Value within its 2021 – 2024 Strategic Plan to “Respect our people, our communities, and their potential” and a Goal to “Become a workplace of choice.” One of the ways the University is supporting this is by ensuring its staff and students have access to mental health resources. The groundwork for some of these resources has been generated through research and academics, whereas other initiatives are borne out of the operational side of the University.

One of the academic related resources is the UniSC Psychology Clinic, a training clinic for postgraduate psychology students, which provides free services to the Sunshine Coast community. The services they provide include individual, couples, family and group counselling. The issues they cover include phobias, health problems, relationship breakdowns, grief, trauma, mood issues, and cognitive assessments. The treatment is provided by registered Provisional Psychologists undertaking Master’s level studies in Psychology, supervised by experienced, registered Clinical Psychologists and Neuropsychologists. (SDG 3)

Another academic-led resource is the My Coping Plan app developed by Professor of Clinical Psychology Helen Stallman. She created the app to help users become aware of unpleasant emotions and develop healthy coping strategies. The app was found to significantly reduce the distress and improve the well-being of those individuals that used the app for one month. The app works by helping users to establish a plan to consciously make healthy choices in the face of negative emotions and sending reminders to review that plan. (SDGs 3, 9)

An operational resource is the Employee Assistance Program, which gives University staff and their families access to up to four free and confidential counselling and coaching sessions for each issue they are facing. These sessions are flexible, being offered via telephone, face-to-face and online. (SDG 3)

The University, in its commitment to mental health, has partnered with organisations to raise the awareness of suicide in the wider community. UniSC’s Alliance for Suicide Prevention – Sunshine Coast, which is coordinated through the Thompson Institute, was formed in response to the region’s higher than average suicide rate. The Alliance offered free online training to the community in 2020 to help individuals to stay alert for the known precursors to suicide amongst their friends and families. The training included video scenarios and interactive learning that suited people with no prior experience in mental health. In August 2021 a safeTALK workshop was held at the Fraser Coast campus with a similar goal to the online training – to teach steps to recognise the subtle signs a person might be considering suicide. The workshop also provided guidance for how to respond and connect at-risk individuals with professional help. (SDGs 3, 17)



SDG 11: Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient and sustainable.



Community and partners

The fourth goal in the University of the Sunshine Coast's 2021 – 2024 Strategic Plan is to “Empower communities to thrive through dynamic and productive partnerships.” The idea behind this goal is to drive human potential in the University's communities by forging strong partnerships across industry, government and regional and global organisations. Many examples have already been presented regarding such partnerships in the University's research and operational efforts. However, there are additional partnerships that have contributed to the achievement of this goal.

The University's Centre for International Development, Social Entrepreneurship and Leadership (CIDSEL) has worked to develop partnerships with communities in the Asia-Pacific region through a series of projects supported by grants. In March 2020 this involved a visit by 14 agricultural scientists from the region who had received **John Dillon Fellowships** from the Australian Centre for International Agricultural Research (ACIAR). They spent three weeks with CIDSEL developing their leadership skills and gaining access to best-practice agricultural organisations in the areas of research, policymaking and extension. (SDGs 4, 11, 15, 16, 17)

A **Memorandum of Understanding (MoU)** was developed between UniSC and the Noosa Biosphere Reserve Foundation (NBRF) in June 2021. The agreement focused on formalising and strengthening the existing relationship between these two organisations and expanding the opportunities to use the biosphere reserve as a living lab. The MoU has paved the way for collaboration on research, learning and community engagement opportunities. It is expected to create opportunities for undergraduate workplace integrated learning and to develop a 'report card' that measures the performance of the reserve against the UNESCO Man and the Biosphere program objectives. (SDGs 4, 11, 15, 17)

UniSC academics teamed up with Care Balonne, a regional development organisation, in late 2021 to **assist rural women** working on farms. The **Real Rural Women's Leadership project** facilitated workshops, conversations and panel discussions in St George, 500 kilometres west of Brisbane that will continue into mid-2022. Four UniSC academics with experience in creative industries, communications and business worked with a Griffith University academic. The discussions, conversations and workshops were designed to enhance the rural women's digital skills, enhance their political influence and help them establish non-farming income that could feed back into their farms and communities. (SDGs 4, 5, 9, 11, 15, 16, 17)



SDG 10: Reduced Inequalities

Reduce inequality within and among countries.

10 REDUCED INEQUALITIES



Indigenous engagement

The University launched the Indigenous and Transcultural Research Centre in July 2020 to share ideas across scientific disciplines and cultures. The Centre targets dialogue and collaboration amongst under-represented voices, including First Nations peoples, migrants, refugees and culturally diverse communities. The key themes of the Centre incorporate creative cultural practices, community capacity exchange and knowledge systems. The Centre's work will involve work to revive, document and extend cultural practices; engage elders, communities, families and school staff/students to present poetry in 'wandiny' exchanges; enhance community aspirations; and research practical capabilities, skills and strengths that exist in those communities. (SDGs 8, 10, 11, 16)

UniSC received an Australian Research Council (ARC) Discovery Project grant in November 2020 to carry out the 'Implementing Indigenous knowledge approaches to doctoral education' project. The project, conducted in partnership with academics and elders from UniSC and other universities, worked to create a multimedia portal to help doctoral researchers understand and embed First Nations and transcultural perspectives into their research at the earliest stages. The idea behind this work was to make a shift from a monocultural approach to problem-solving to a multiple knowledge system approach that is better suited to addressing the complexity of world problems. (SDGs 4, 10, 11, 17)

Another educational resource that the University made available was free university skills courses for members of the Sunshine Coast Aboriginal and Torres Strait Islander community interested in tertiary study. The University Skills for You course, run by UniSC's Indigenous Services, was open to individuals 18 and over who did not finish high school and those that haven't studied formally in years. The course provided an introduction to the university experience and worked with participants to upgrade their academic skills in areas such as writing and researching. Another key goal was to improve the confidence of participants in their ability to pursue higher education. The final stage of the course was to provide individual sessions with University career advisers and Indigenous Services student advisors to help participants in developing career and study plans. (SDGs 4, 10)



4 QUALITY EDUCATION



8 DECENT WORK AND ECONOMIC GROWTH



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



Events

Global Climate Change Week 2020

19–23 October

Climate Change is a topic that causes anxiety for many young adults. Global Climate Change Week at UniSC focused on combatting that anxiety by demystifying climate change and raising awareness around sustainability at the University and beyond.

The three themes for the week were:

- Knowledge is power;
- Don't be intimidated; and,
- Start small, think big.

UniSC hosted free events throughout the week for students and staff to help everyone to learn about and put climate change into perspective and to inspire action, including:

- Three Zoom Q&As featuring UniSC's own sustainability experts with the themes of climate change, sustainability, SEQ and UniSC; flora, fauna and the impacts of climate change; and climate change adaptation – impacts and planning;
- A free bike clinic for staff and students to get their bicycles in shape;
- An information marquee highlighting UniSC sustainability initiatives;
- Screenings of Rubber Jellyfish documentary; and,
- Social media and poster competitions.



NAIDOC Week 2021

4–11 July

NAIDOC Week is held across Australia in July each year to celebrate Aboriginal and Torres Strait Islander people's achievements, their culture and history. 2021 NAIDOC Week was held 4–11 July with the theme of 'Heal Country, heal our nation,' which called for strong measures to recognise, protect and maintain Aboriginal and Torres Strait Islander heritage and culture.

The University hosted several events and activities, including the Country in Mind exhibition at the University of the Sunshine Coast Art Gallery (7 May – 31 July). The exhibit drew from the UniSC Art Collection and focused on work from the central desert, the Kimberley, Arnhem Land and the offshore islands in the far north. The exhibition was part of Connecting Stories, an initiative of Creative Arts Alliance.



Art

Art has a major role to play in creating a sense of community and interpreting the social and cultural issues that challenge us as a society. The University of the Sunshine Coast Art Gallery is a space where ideas, community and art come together. It was redeveloped to increase its exhibition and storage space in 2019 and 2020, doubling its footprint so that it could serve as the leading gallery in the region. The Gallery reopened in August 2020 and has since presented a series of research-led and enquiry-based exhibitions by leading Australian and international artists. During 2020 and 2021 the exhibitions featured links to nature, social commentaries, new perspectives on historical events and investigations of mental health. The Gallery has also showcased UniSC student work.



Exhibit dates	Artist(s) & title	Detail
17 August 2020 – 7 November 2020	Michael Cook Michael Cook: Undiscovered	A showcase of work by the former commercial photographer who shifted to art in an effort to explore his Aboriginality. The exhibit (pictured above) brought together over 76 artworks made in the decade from 2010 to 2020 and incorporated Cook's interest in exploration of the legacy of Australian colonialisation.
20 November 2020 – 16 January 2021	Marian Tubbs Marian Tubbs: we need privacy guys here too	Low-grade and found materials used to question ideas of value and raise ecological, social and economic issues.
	Various Craftivism. Dissident Objects and Subversive Forms	Intended to broaden the understanding of craft-making traditions. Curated by the Shepparton Art Museum and featured artists including Erub Arts, Catherine Bell, Karen Black, Penny Byrne, Debris Facility, Michelle Hamer, Kate Just and Hiromi Tango.
1 February 2021 – 24 April 2021	Robert Andrew, Fiona Foley, Julie Gough, Colin Isaacs, Jolea Isaacs, David and Tim Leha, Quarralia Knox, Laurie Nilsen, Judy Watson and Warraba Weatherall Myall Creek and beyond	Featured the work of Australia's leading Indigenous artists to explore the history and site of the 1838 Myall Creek massacre. It was designed to challenge visitors to look anew at this moment in history. One feature of the exhibit was the Myall Creek Gathering Cloak made by community members in collaboration with Carol McGregor.
13 August 2021 – 30 October 2021	Rose Barrowcliffe Reading between the lines: Uncovering Butchulla history in the K'gari research archive	A creative examination of research into the history of Queensland's First Nations people that was hidden, or unrecorded, in the state archives. The work focused on the Butchulla people, the traditional custodians of K'gari Fraser Island.

Exhibit dates	Artist(s) & title	Detail
29 July 2021 – 14 November 2021 (hosted at the UniSC Library and TAFE Mooloolaba)	Megan Gill and UniSC's Thompson Institute Portraits of Mankind	An exploration of how men on the Sunshine Coast deal with mental health issues. It includes portraits of local men that have spoken openly about the need for a greater focus on mental health and who have helped the wider community by using their personal experiences.
10 November 2021 – 13 November 2021	Final-year UniSC students (100+) Tiny Details: UniSC Design 2021	An immersive experience that included wall art, skeleton and skull props, branded items, augmented reality design, projections, photography, games and more. The theme explored the idea that small actions can make a big difference. Sustainability emerged, along with climate action, as key reference points in the students' work.

The University didn't limit its artistic collaborations to gallery exhibits. In particular, while the Art Gallery was being renovated, Dr Leah Barclay, a Lecturer in Design at UniSC, collaborated on a 24-hour global radio and web broadcast that followed sunrise around the Earth. The **Reveil broadcast**, aired on 2 May 2020, included livestreams from Mary Cairncross Reserve in Maleny and underwater hydrophones in the Noosa Biosphere Reserve, Eudlo Creek and the Maroochy River. Dr Barclay's work in eco-acoustics and conservation technology has been exhibited worldwide and uses sound to understand the health of the environment and reconnect communities to nature. Dr Barclay also **collaborated** with Kabi performer-educator Lyndon Davis, a UniSC Honorary Senior Fellow, and Tricia King, a UniSC Lecturer to produce a series of three listening events to feature at the 2020 Horizon Festival (July 2020). The series, 'Listening in the Wild,' included a **sonic immersion** in the Maroochy River, a sound walk along Eudlo Creek and an ocean expedition from Mooloolaba to Old Woman Island. The events featured nature sounds captured by Dr Barclay, storytelling by Lyndon Davis and photographic images taken by Tricia King. Taken together the experience was designed to engage audiences with ecosystems across the Sunshine Coast. (SDGs 3, 10, 11, 12, 13, 14, 15, 16, 17)



Performance

Measurement

Capturing information is the key to measuring the environmental impact of the University of the Sunshine Coast. The University currently tracks the following information on a regular basis:

Measurement	Scope(s)	Campuses	Schedule
Transport: diesel consumption	1, 3	All campuses	2x/year (biannually)
Transport: petrol consumption	1, 3	All campuses	2x/year (biannually)
Transport: biodiesel consumption	1, 3	All campuses	As relevant
Transport: ethanol consumption	1, 3	All campuses	As relevant
Purchased paper	3	All campuses	2x/year (biannually)
Business travel – air	3	All campuses	2x/year (biannually)
Electricity from fossil fuel / grid	2, 3	SD, MB, FC, TI, GY, SB, OH, MMH*	Monthly
Electricity from renewables	2, 3	SD*	Monthly
Diesel consumption – stationary	1, 3	SD, MB, DV*	As relevant
LPG consumption – stationary	1, 3	SD*	As relevant
Waste: domestic waste to landfill	3	SD, MB*	Monthly
Waste: clinical	3	SD, MB, FC, GY, SB, OH, MMH*	Monthly
Sewerage treated / water	3	SD, MB, FC, TI, MMH*	Quarterly
Refrigerant gases	1	SD, MB, FC, TI, GY*	As relevant

- * DV Dilli Village
- FC Fraser Coast
- GY Gympie
- SB South Bank
- SD Sippy Downs
- MB Moreton Bay
- MMH Morayfield Medical Hub
- OH Ochre Health
- TI Thompson Institute

Additional measurements that will be captured in the lead up to becoming carbon neutral in 2025 include greater depth of travel and transport figures (ie, Shuttle Bus usage) and an expansion of Scope 3, including the supply chain.

Emissions measured

Emissions source	Scope	2016 – base year	2020	2021
Refrigerant gas	1	424	361	351
Fleet Vehicles – gasoline	1	126	112	119
	3	7	6	6
Fleet Vehicles – diesel	1	83	81	106
	3	4	4	5
Fleet Vehicles – biodiesel (2016); E10 (2020/2021)	1	3	5	6
	3	0	0	0
Stationary fuel – LPG	1	10	6	10
	3	1	0	1
Stationary fuel – diesel	1	Did not apply	100	88
	3	Did not apply	6	5
Electricity	2	8,728	8,239	8,385
Electricity – line loss	3	1,606	1,221	1,242
Business Travel – flights > 3700 kms	3	805	351	2
Business Travel – flights from 463–3700 kms	3	383	68	82
Business Travel – flights < 463 km	3	15	6	1
Accommodation	3	Not captured	Not captured	14
Waste to landfill (incl. clinical in 2020, 2021)	3	116	127	203
Potable water (sewerage)	3	1	49	76
Purchased paper	3	18	0	0
Total all sites		2016	2020	2021
Scope 1		646	665	680
Scope 2		8,728	8,239	8,385
Scope 3		2,956	1,838	1,637
Total all emissions		12,330	10,742	10,702
Benchmark values*		2016	2020	2021
EFTSL (full time equivalent)		9,822	12,017	12,170
FTE (excluding casuals) (full time equivalent)		906	1,057	1,064
EFTSL + FTE (full time equivalent)		10,728	13,074	13,234
UFA (m2)		50,540	47,504	69,903
GFA (m2)		81,398	82,531	126,688
Benchmarked emissions		2016	2020	2021
Total emissions by EFTSL		1.26	0.89	0.88
Total emissions by EFTSL + FTE		1.15	0.82	0.81
Total emissions by UFA (m2)		0.24	0.23	0.15
Total emissions by GFA (m2)		0.15	0.13	0.08

* EFTSL (equivalent full time student load); FTE (full time equivalent staff); UFA (useable floor area); GFA (gross floor area)

Carbon Management Plan (CMP) progress

The following chart indicates the most up-to-date status of the actions identified in the Carbon Management Plan. Some actions were implemented prior to 2020/2021 but have continued during this reporting period.

Initiative	Progress	Detail
Management and governance actions		
Transparency and reporting	Ongoing	This report serves as a public reporting of progress towards carbon neutrality. Facilities Management also reports through the Tertiary Education Facilities Management Association (TEFMA).
Funding CMP actions	Ongoing	Renewable energy projects have been submitted to the Strategic Asset Management Plan which earmarks funds in the short term. LED and HVAC upgrades are covered through Facilities Management's operations and maintenance budget. Tree plantings have been funded through Land for Wildlife grants. Operational budgets have covered sustainability communication and engagement efforts. Recycled waste streams have been expanded through efforts that have minimal or no cost for UniSC.
Assessment of carbon Emission sources	Ongoing	Two consultancies were commissioned at the end of 2021 to undertake further review and revision of the University's emissions boundary and footprint.
Data management systems	Ongoing	Sensors are in place and connected to the Building Management System to capture information across the new Moreton Bay campus and the Sunshine Coast campus.
NCOS / Climate Active certification	Ongoing	UniSC has been liaising with Climate Active certified universities and carbon accounting providers, investigating the requirements for Climate Active certification.
Carbon abatement actions		
LED lighting upgrades	Ongoing	On-campus wayfinding lighting has been replaced with LED streetlights, and t5 low energy fluoro-tubes are in use across the Sunshine Coast campus. All exit and evacuation lights have been replaced with a system that provides 24/7 monitoring.
HVAC upgrades	Ongoing	Various initiatives have been implemented to improve energy efficiency and HVAC services, such as variable speed drives, optimisation of ventilation controls and building management system upgrades.
Thermal energy storage and solar PV	In place and ongoing	Thermal energy storage tank and solar PV installed and operating at Sunshine Coast campus (as of 08/2019). Solar PV roof installed at Sunshine Coast campus (carparks 11 & 11a), alongside 4 electric vehicle charging stations.
Renewable energy generation	Planning	Business cases have been submitted to the Strategic Asset Management Plan for solar projects at multiple campuses.
Carbon offset purchasing	Not yet started	To be undertaken in 2025/2026 as part of the Climate Active certification process. An offset strategy will be developed in 2022 as part of the Carbon Management Plan review.

Initiative	Progress	Detail
Engagement and capacity building actions		
Sustainable events	Planning and ongoing	The first annual Sustainability Week is scheduled for 2022. Sustainability stalls have been run at all in-person Orientation Weeks. Bike clinics have been hosted multiple times each year.
Engaging students on energy efficiency	Planning and ongoing	Linkages have been made with several course coordinators. Sustainability Tours and presentations have been provided to students in the Engineering, Environmental Management and Outdoor Education disciplines.
Displays re: resource consumption	Ongoing	A display with real-time energy consumption from multiple campuses is in place on the Sunshine Coast campus. Planning is underway to expand these displays to cover additional data and to be located in public areas around the Sunshine Coast and Moreton Bay campuses. Other sustainability messages are shared on social media and on the screens in food venues and at events.
Work with contractors on carbon reductions	Ongoing	UniSC works closely with Biniris, its cleaning contractor, to implement a multiple stream waste management system to divert as much waste as possible from landfill. UniSC works with Veolia to ensure the water battery and HVAC systems are operating efficiently. Sustainability criteria is used in the tender process to evaluate potential contractors.
Staff and contractor inductions	Ongoing	A Sustainable Employee Checklist and Sustainability Onboarding session are in use to inform new hires about UniSC's sustainability commitments and expectations.
Marketing and Communications	Planning and ongoing	The Sustainability Officer leads regular tours for external audiences, including regional schools and businesses, as well as for courses and staff. Updates have been made to the Sustainability Tour information for Student Ambassadors that lead these tours for visiting school groups and special events. Planning is happening around linking news stories and media outreach to the UN Sustainable Development Goals.
Sustainability champions	Ongoing	A Sustainability Champions program was formed with staff members from each department and campus as representatives to share ideas and convey messages about sustainability initiatives. The Building Management System continues to be enhanced to enable tracking of performance and trends in energy/water use. This information is being used to share information on energy efficiency building by building and campus by campus with the Champions.
Sustainable procurement	Ongoing	Guidance documents are in place to accompany the tender and procurement processes, including Sustainability Contract Provisions and Sustainable Purchasing Guidelines.
Learning and teaching	Planning and ongoing	The Sustainability and Engagement Forum continues to provide opportunities for collaboration between operational and teaching/research staff and students. Several initiatives have emerged from this, including participation in the Times Higher Education Impact Rankings benchmarking process and a program to embed the SDGs into the curriculum. A shift is being made to look at the living lab potential of operational sustainability actions.
Incentive programs	Ongoing	Borrow ware is in place at two UniSC Sunshine Coast campus cafés. A bring-your-own cup initiative is in place at the Sunshine Coast campus, with discounts available at multiple food and beverage outlets. Both programs are promoted across the campus. This program took a pause at the onset of COVID-19 but was back in place using a contactless pour system in 2021.

The year ahead

COVID-19 provided a number of challenges to UniSC in 2020 and 2021, but the opening of the Moreton Bay campus provided opportunities. As the University continues efforts to reach out anew to international students now that international and state borders are open, a focus on attracting local students to study at the Moreton Bay campus will also be a priority.

Given all the shifts in the way education is delivered, 2022 will be an appropriate time to review key guiding plans. Some of the plans set to be reviewed include:

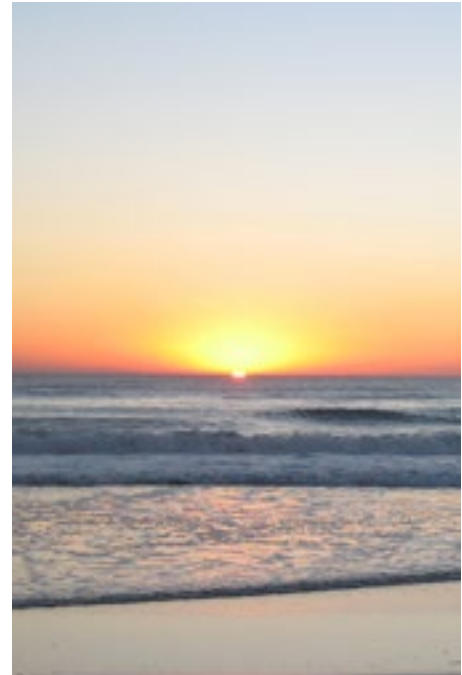
- **Carbon Management Plan:** This Plan will be reviewed and revised to expand the emissions boundary of the University in light of its growth and to shift the compliance components from the National Carbon Offset Standard (Government program in 2017 when the Plan was developed) to Climate Active (current Government carbon neutral certification program). A sub-component of this review will look at opportunities to achieve net zero energy at the Sunshine Coast campus.
- **Campus Master Plan:** This Plan has been in place since 2012 and is due for an update. This update will expand its scope to include new aspects of sustainability and built space considerations that adhere to new teaching modes. It will also look to provide more clear guidance into management of the Sunshine Coast campus resources and spaces.
- **Design Standards and Guidelines:** The Guidelines have been going through revisions throughout the development of the first Moreton Bay building, but they will continue to be updated to reflect the most current sustainable design standards.

In addition to reviewing plans, sustainability initiatives aimed at reducing transport related emissions and increasing waste streaming will continue. These include a review and planning to improve active transport facilities, inclusion of soft plastics and polystyrene recycling streams and expansion of the Electric Vehicle charging stations on the Moreton Bay and Sunshine Coast campuses.

With the Foundation Building open on the Moreton Bay campus and the strong student numbers that it draws, construction will begin on three new buildings. These buildings will feature embodied carbon designs and create additional study and collaboration spaces.

Beyond the operational plans for the upcoming year, academics will focus on embedding the Sustainable Development Goals into their courses. Many of the research projects highlighted in this report will continue into 2022.


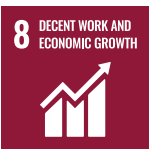

From an engagement perspective, the University will look for opportunities to engage its staff, students and the public on sustainability issues. This will include UniSC Sustainability Day (or Sustainability Week). The event will be themed around the Sustainable Development Goals and will include market day events, bike clinics and documentary screenings. This will become an annual event.



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Links

UniSC sustainability webpages

University of the Sunshine Coast

usc.edu.au

Sustainability at UniSC

usc.edu.au/about/sustainable-unisc

Sustainability Operational Policy

usc.edu.au/about/policies-and-procedures/sustainability-operational-policy

Sustainability Procedures

usc.edu.au/about/policies-and-procedures/sustainability-procedures

UniSC documents

UniSC Strategic Plan 2021–2024

usc.edu.au/strategicplan

Strategic plans (ie, Carbon Management Plan and Diversity and Inclusion Plan)

usc.edu.au/cmp

Campus Master Plan

usc.edu.au/about/strategy-quality-and-planning

More information

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