

## Thank you for attending Greater Foundations24!

This document provides the contact details of each speaker and includes a number of resources they have shared for use in your classrooms and schools. It also includes the slides of each presenter for your reference.

If you require further details or have additional questions, please contact the relevant speaker. If you would like access to any photos from the day or would like to provide additional feedback about the event, please contact Georgia at [georgia@gw3.com.au](mailto:georgia@gw3.com.au).

We hope to see you again at future Greater Foundations events!





## Contents:

**01** [Nicole Dyson, Future Anything](#) >

**02** [Kylie Porter, GW3](#) >

**03** [Michael Harris, Pioneer Valley Lodge](#) >

**04** [Harry Parker, Forge Engineering](#) >

**05** [Glen Lamb, DGH Engineering](#) >

**06** [Frank Attard, Key Solutions Group](#) >

**07** [Chris Monsour, Prospect Agriculture](#) >

**08** [Robert Petherbridge, TAFE Queensland](#) >

**09** [Raquel Bailey, BHP](#) >

## MC & Keynote

Once referred to as having 'super hype hair' by a fourteen-year-old workshop participant, Nicole is an experienced school leader and a globally recognized expert and practitioner in project-based learning and youth entrepreneurship.

She is the founder of Future Anything, an award-winning, curriculum-aligned entrepreneurship program for high school students, and has worked alongside 100's of schools and over 20 000 students nationally to bend the future; one youth-led idea at a time.

Over the past four years, Future Anything has worked in partnership with the GW3 to support students, schools and systems to future-proof their teaching and learning. This has included hosting a number of Big Ideas Challenge in region, hosting a series of professional development workshops in region for teachers on everything from Project-Based Learning to Design Thinking, and the growth of Activate, with 7-10 secondary schools embedding this innovative enterprise program within their classrooms.

### Contact Details:

-  [nicole@futureanything.com](mailto:nicole@futureanything.com)
-  0415 509 666
-  <https://www.linkedin.com/in/nicdyson/>
-  <https://futureanything.com/>
-  <https://futureanything.com/resources/>



**Nicole Dyson**

Future Anything



Find additional resources from Nicole on the following pages.



## Check out the following suggestions from Nicole:

- The Learning Creates Report 'Learning Beyond Limits' is [here](#).
- The World Economic Forum's 2023 Future of Jobs Report is [here](#).
- More on Heather McGowan and her frameworks [here](#).
- You can see some fantastic research about the Future of Work from the FYA [here](#). They're oldies, but goodies. And, great for young people to read/ engage with.
- My blog on how we assess enterprise skills in our Activate classrooms is [here](#).
- If you want to see the list of books that we most often recommend, you can [check them out here](#). If you've got another one you'd recommend, please let me know!
- Finally, we've just opened up registrations for our first ever virtual professional learning program. Through a series of weekly online workshops, we'll work with you to design an innovative new (V9 aligned) unit of curriculum. You [can see more here](#).
- As discussed at Greater Foundations24, Greater Whitsunday Career Education Modules have been developed and we encourage you to make use of them. You can read more [here](#) or [here](#) and [request access to the modules here](#).

FOR GREATER CAREERS MODULES

|  |  |   |  |
|--|--|---|--|
| <p><b>YEAR 7</b><br/>For Greater Careers</p> <p>CLICK HERE FOR UNIT OVERVIEW &amp; CURRICULUM RESOURCES</p>                      | <p><b>YEAR 8</b><br/>For Greater Careers</p> <p>CLICK HERE FOR UNIT OVERVIEW &amp; CURRICULUM RESOURCES</p>                    | <p><b>YEAR 9</b><br/>For Greater Careers</p> <p>CLICK HERE FOR UNIT OVERVIEW &amp; CURRICULUM RESOURCES</p> | <p><b>YEAR 10</b><br/>For Greater Careers</p> <p>CLICK HERE FOR UNIT OVERVIEW &amp; CURRICULUM RESOURCES</p> |
| <p><b>MINI RESUME BUILDING COURSE</b><br/>For Greater Careers</p> <p>CLICK HERE FOR UNIT OVERVIEW &amp; CURRICULUM RESOURCES</p> | <p><b>STANDALONE YEAR 10 COURSE</b><br/>For Greater Careers</p> <p>CLICK HERE FOR UNIT OVERVIEW &amp; CURRICULUM RESOURCES</p> |   |  |

FOR GREATER CAREERS IS DRIVEN BY:



**To stay up to date with all things Future Anything, join our Mailing List [here](#). We promise, no spam!**

## Speaker



**Kylie Porter**

Greater Whitsunday Alliance (GW3)

**Kylie is the Chief Executive Officer of Greater Whitsunday Alliance (GW3) the peak independent, economic development organisation for the Greater Whitsunday region.**

The organisation is a strategic point of contact for local, national and international networks and advocates for, and promotes prosperity across the Greater Whitsunday region. GW3's focus is not centred on one specific industry and has a remit to deliver across all key driving industries in the region including mining and METS, agriculture, tourism, the bioeconomy and others.

Kylie has more than 25 years professional marketing and corporate communications experience, and is well versed on all the big issues of the Greater Whitsunday region today. Kylie is also a founding Director of C-Res. C-Res delivers the Local Buying Program in partnership with BHP across all BHP assets across Australia.

### Contact Details:

 [kylie@gw3.com.au](mailto:kylie@gw3.com.au)

 07 4845 8222

 <https://au.linkedin.com/in/kylie-porter-mackay>

 <https://www.greaterwhitsundayalliance.com.au/>

 [GW3 Workforce Development YouTube Channel](#)

[GW3 Workforce Development Webpage \(including Career Education Modules\)](#)



**Find Kylie's presentation slides and on the following pages.**

# IMAGINE GREATER



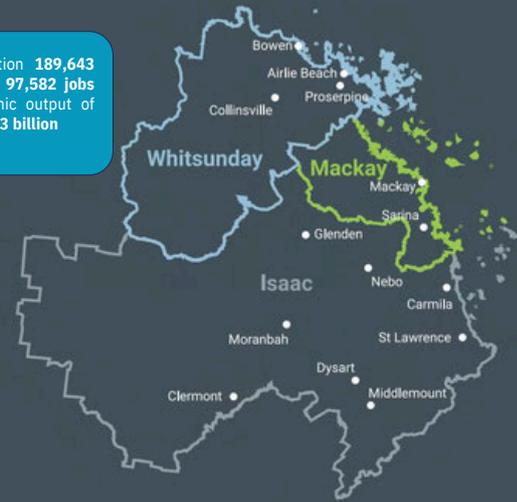
**GW3D**  
GREATER WHITSUNDAY ALLIANCE  
MACKAY ▶ ISAAC ▶ WHITSUNDAY

Greater Whitsunday region spans

**90,354 km<sup>2</sup>**



- Population 189,643
- people 97,582 jobs
- Economic output of \$74.363 billion

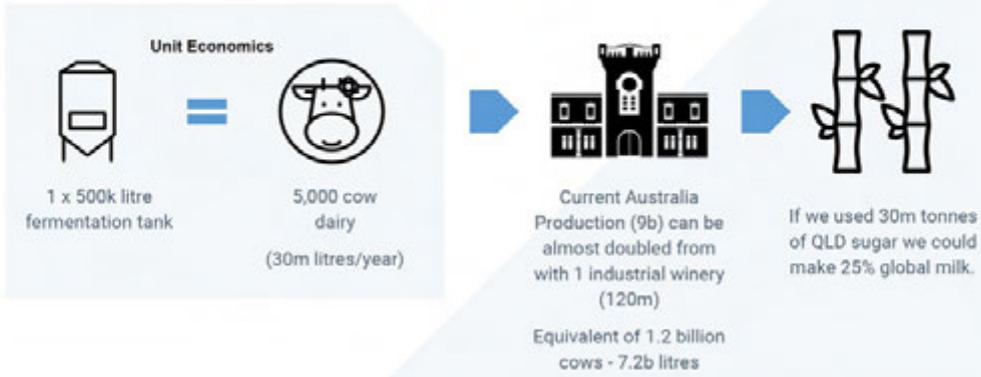


## VISION

By 2030, to be a globally significant biomanufacturing region, enabled by diverse biomass, human talent, research investment and supporting infrastructure.

**GW3D**  
GREATER WHITSUNDAY ALLIANCE  
MACKAY ▶ ISAAC ▶ WHITSUNDAY

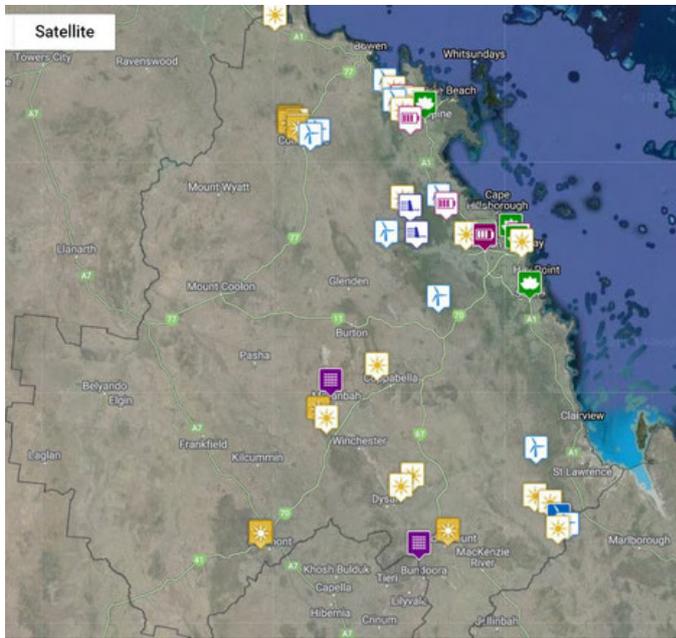
## Case study: How much milk could we make?



### MINING + SPACE

“The things you need to do to make equipment work in extremely harsh operational mining environments 24/7 under potentially explosive atmospheres – these are not unlike the same challenges that we encounter for space applications.”

*Dr Jonathon Ralston, CSIRO ISRO Project Leader*



## GREEN ENERGY TRANSFORMATION

- ▶ **49 green energy projects proposed, approved or operational** in Greater Whitsunday region.
- ▶ **17,000 MW** total electricity generation.
- ▶ One megawatt of electricity can power approximately **1000 homes**
- ▶ 17,000 MW can power up to **7 million households**.
- ▶ Queensland's **10 coal-fired power** stations collectively produce 8,329 MW total electricity generation.

SOURCE: <https://electricity-generation-map.epw.qld.gov.au/#>



### PUMPED HYDRO PROJECTS

- ▶ Pioneer Burdekin, the world's largest pumped hydro scheme "**Battery of the North**" (5,000MW)
- ▶ Capricornia Energy Hub (750MW), smaller but **one of only 600** planned hydro projects globally.
- ▶ Only four turbine manufacturers globally.
- ▶ Significant supply chain opportunities including:
  - ▶ **specialized machine workshops; control and automation devices; welding and engineering services; revegetation and environmental expertise.**

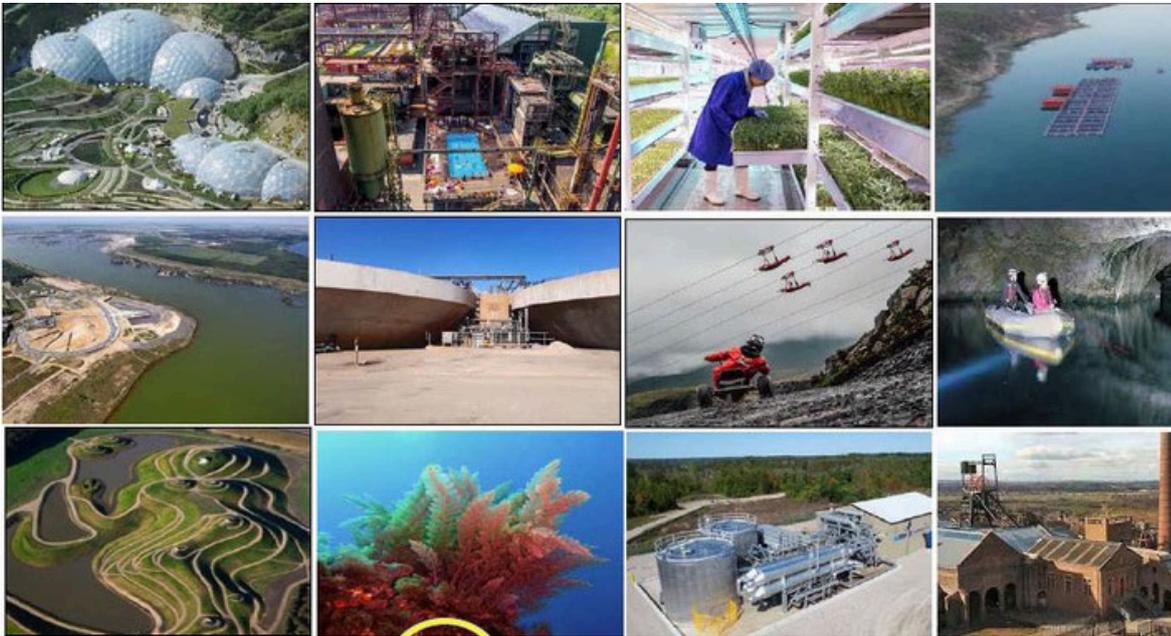


## ECONOMIC REHABILITATION AND DIVERSIFICATION OF MINE SITES



- ▶ Mining for 50 – 70 years
- ▶ Economic diversification can take a generation
- ▶ Closed cropping; tourism; seaweed and algae production; aquaculture?





For greater information:  
**Kylie Porter**  
 kylie@gw3.com.au



[linkedin.com/in/kylie-porter-mackay/](https://www.linkedin.com/in/kylie-porter-mackay/)



## Speaker



**Michael Harris**

Pioneer Valley Lodge

**After spending 10 years working across Asia Pacific with General Motors in Purchasing and Logistics, Michael founded the Australian Fishing Championships (AFC) in 2003 putting one of Australia's favoured pastimes on TV as a sport.**

In 2015, the AFC visited the Mackay Region for the first time with anglers competing across the Pioneer Valley at Kinchant, Teemburra and Eungella Dams. Michael recognised that such a cluster of world-class fishing impoundments presented a unique fishing tourism opportunity. The Mackay Regional Council's transformational Pioneer Valley Mountain Bike Project saw Michael acquire land in Finch Hatton surrounded by world class Barramundi impoundments, the Cridton State Forest and Eungella National Park.

The property will house the \$6.5 million Pioneer Valley Outdoor Tourism Hub being a world-class facility befitting of the location where visitors can enjoy the best of what the region has to offer be it fishing, hiking, walking, trail running and mountain biking.

### Contact Details:



michael@marinemedia.com.au



0400 511 190



<https://www.connectingmackay.com.au/finch-hatton-mtb>

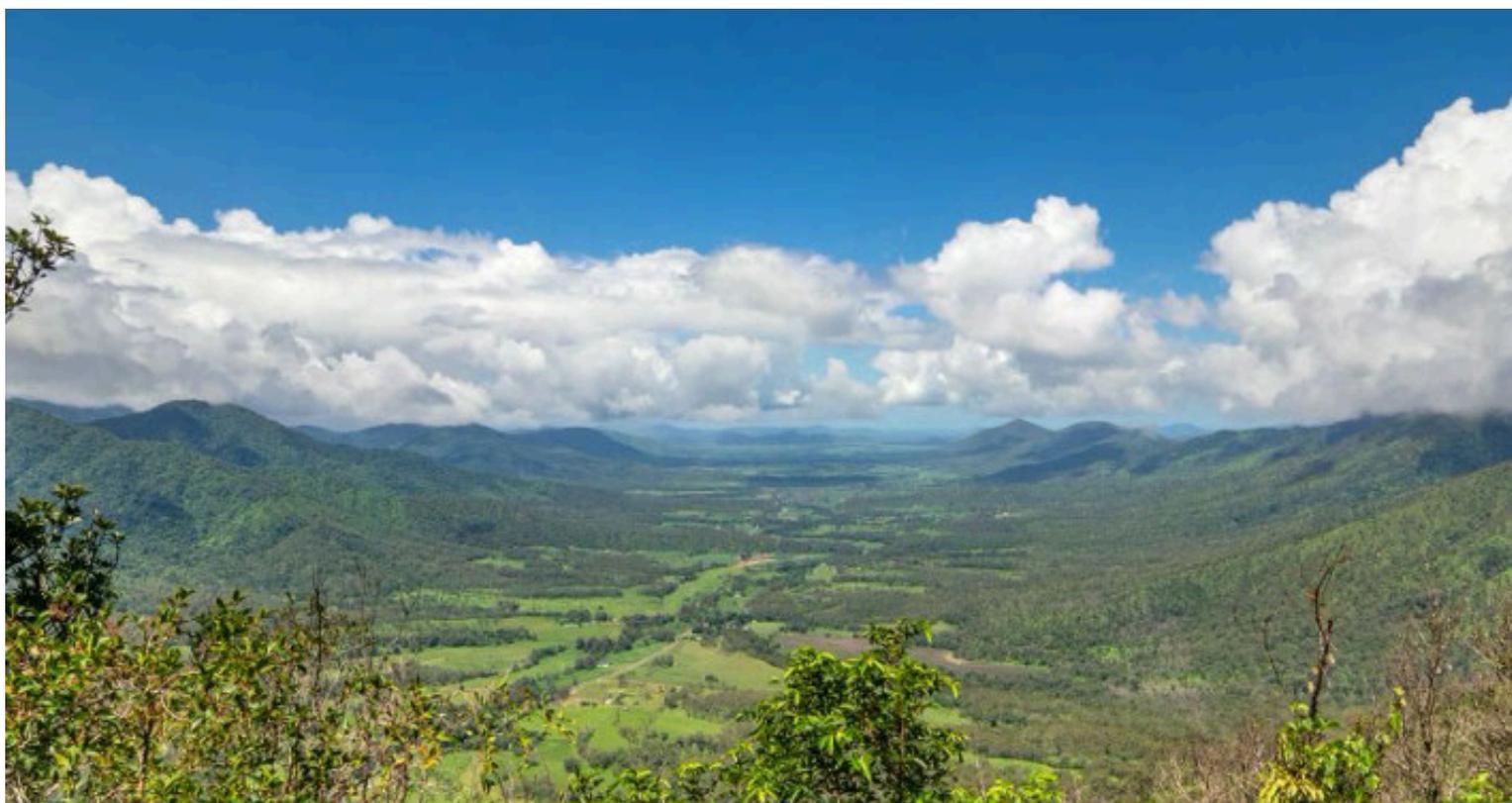


**Find Michael's presentation slides on the following pages.**

UNLOCKING REGIONAL  
TOURISM

# PIONEER VALLEY OUTDOOR TOURISM HUB

Finch Hatton



# CONTENTS

---

MAP OF AREA

INTRODUCTION

TREND IN TOURISM

BRIEF HISTORY OF THE PIONEER VALLEY

FINCH HATTON MOUNTAIN BIKE PROJECT

ABC OF MOUNTAIN BIKE TOURISM

PIONEER VALLEY OUTDOOR TOURISM HUB

IN SUMMARY

CONTACT



# LESS CITY MORE NATURE

---

There is a defined trend in tourism towards authentic experiences, nature and adventure.

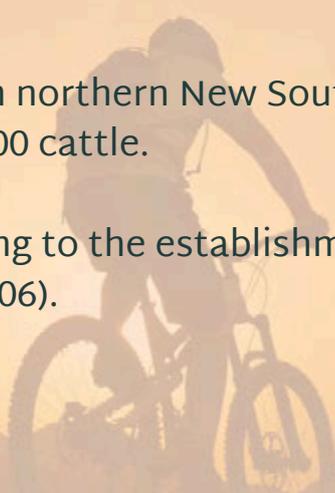
## BRIEF HISTORY

---

Prior to European settlement, an estimated 2000 Indigenous people lived in the Pioneer Valley.

John Mackay a Scottish pastoralist explorer, from northern New South Wales established Green Mount Station in 1862 with 1200 cattle.

Cane farms occupied the floor of the valley leading to the establishment of two valley mills at Marian (1895) and Finch Hatton (1906).



# BRIEF HISTORY

---

From Finch Hatton a further 10km west is Netherdale at the foot of the range where you climb 700m to Eungella.

Land ballots in 1935 established 39 lots for the purpose of dairy farming.

A lease condition was to clear 50 acres a year for 3 years leading to the establishment of 7 sawmills and 50 dairy farms.

Cream was transported by packhorse to Netherdale, then rail to Rockhampton.



In 1933 the Eungella Chalet was built.

From 1937 until 1973 Mr Kaj and Mrs Sprogoe operated the chalet.

Several owners since 1973.

Today a shell of its former self, representing 90 years since the valley saw any significant tourism investment.

# FINCH HATTON MTB PROJECT

---

In 2019 the Mackay Regional Council commissioned a Mountain Bike Strategy.

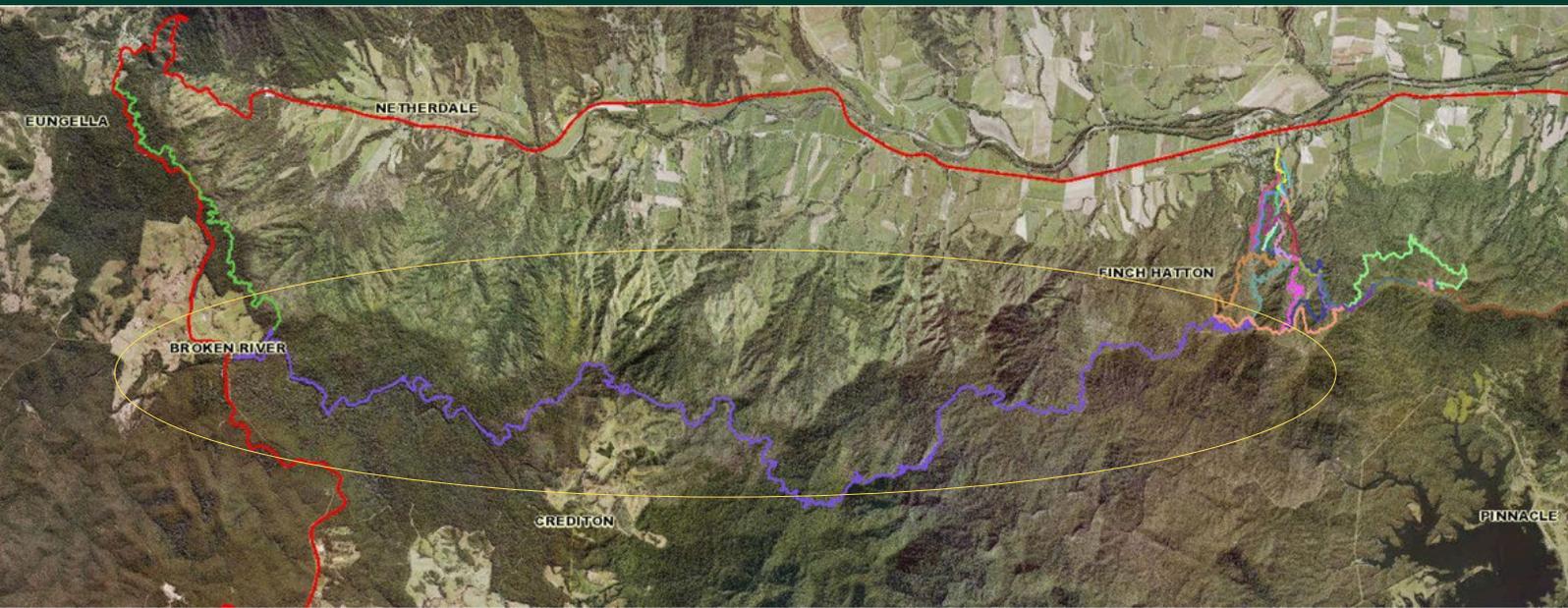
It identified the opportunity to develop an internationally significant sub-tropical mountain bike trail town destination .

Cairns based World Trails designed and built a trail network featuring gravity airflow trails funneling into Finch Hatton.

Stage One was delivered first quarter 2024 at a cost of \$10 million.

A transformational project for the Pioneer Valley.

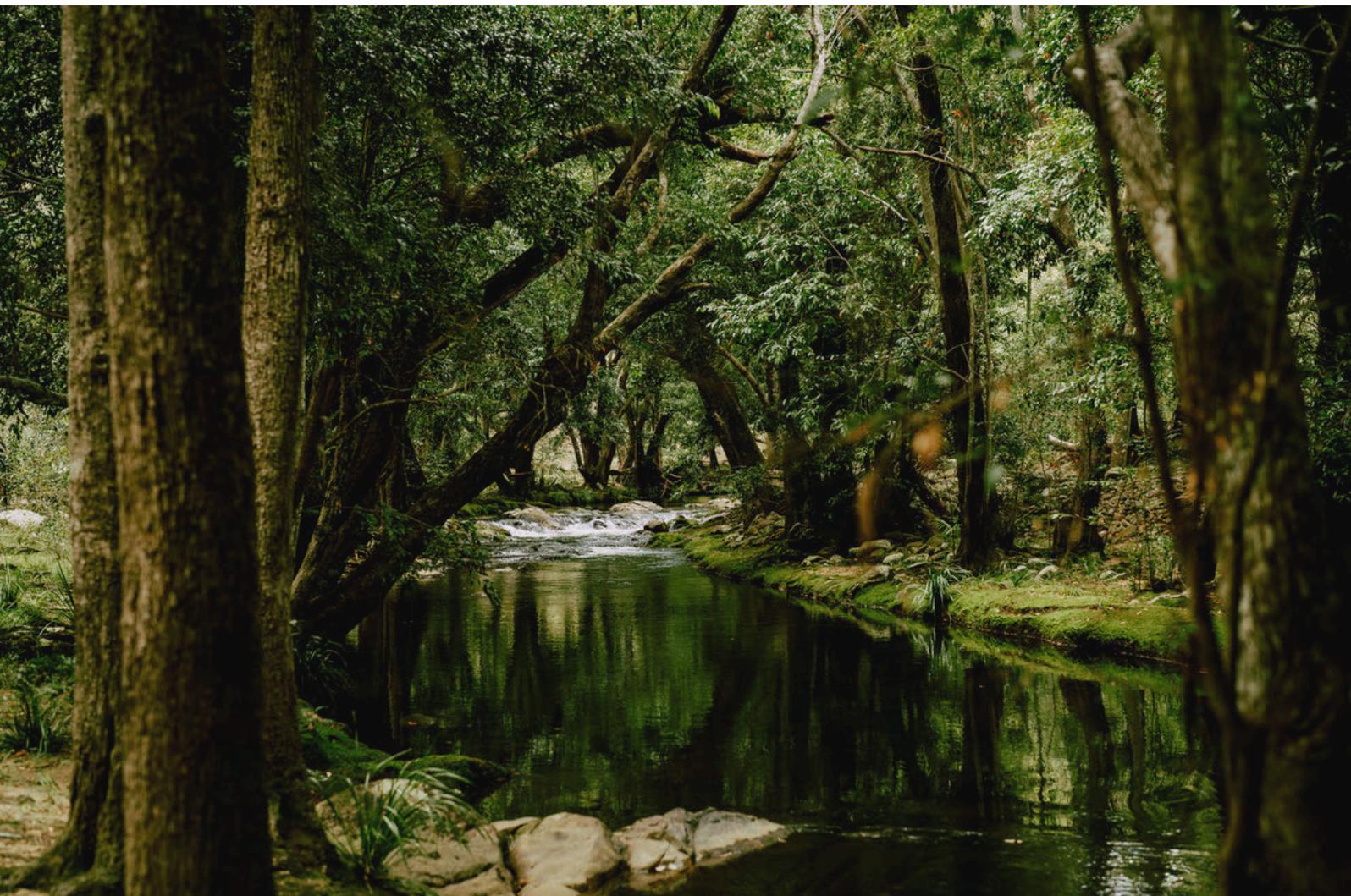




40 km Adventure Trail running from the top of the range down the southern range of the valley connecting with the gravity trails into Finch Hatton.

## TRANSFORMING THE VALLEY

- A quality diverse network of trails catering to all skill levels incorporating gravity airflow and adventure trails all connected to the town of Finch Hatton.
- Accessible on the east coast of Australia.
- Diversity of world class activities beyond mountain biking such as: Trail running, hiking the Mackay Highlands, day trips to waterfalls, freshwater swimming and Barramundi fishing across 4 world class impoundments.
- This project will support Mackay's vision to become a premier outdoor adventure tourism destination by driving new visitors and operators to the region.



# ABC OF MTB TOURISM



## WHISTLER

40 years ago locals started carving MTB trails once the snow melted. It was an “off-season “ pursuit.

Today the Mountain Bike season at Whistler is bigger than the snow season

## ATHERTON

2011 a concept plan for MTB trails was delivered. Key elements for establishing a MTB destination was not incorporated.

Trails must connect to a town with a single start and finish point.

## RAIL TRAIL

120 km trail from Tallarook to Mansfield along an old rail line winding through more than 12 towns.

While it is good it is not a transformational project.

## TRAIL TOWN

2015 the town of Derby began its transformation into a internationally acclaimed mountain bike destination.

A model was created and an Australian MTB trail town was born.

# A TRAIL TOWN

## CONSUMER

Visitor arrives and they are set for the duration of their stay.

Like a ski resort where you stay on the mountain and you Ski IN Ski OUT from your accommodation.

You start and finish at one point and everything to experience is hassle free.

## CAPITAL

A concentration of capital that can be leveraged and invested successfully.

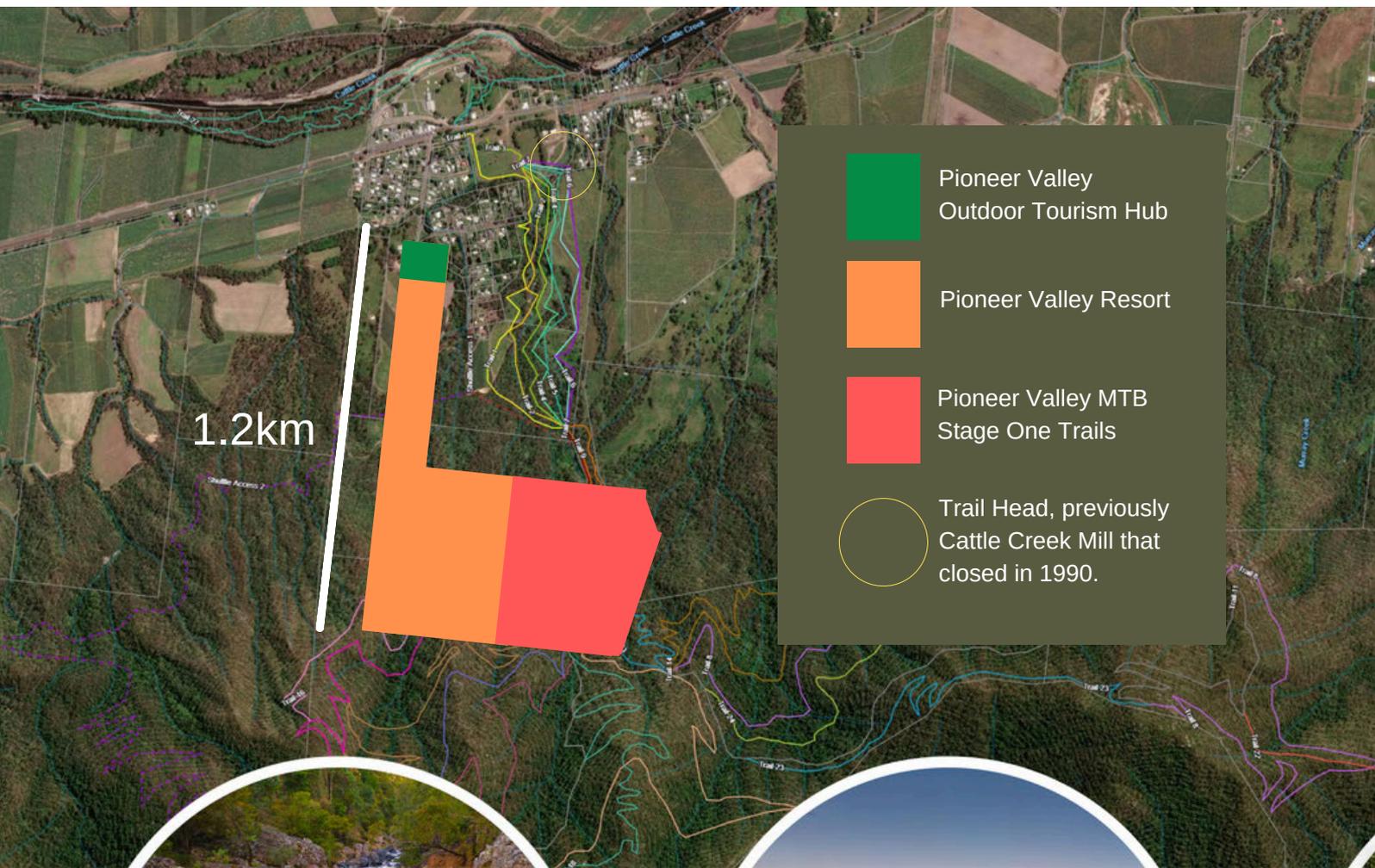
Retail, services and accommodation work together to establish a seamless visitor experience.



## Pioneer Valley Outdoor Tourism Hub.

A world class fit for purpose facility befitting of the location is being built thanks to the Queensland Government's Activate Ecotourism Infrastructure fund, enabling local guides to host clients across the valley for up to 7 days.





# STRATEGY

The facilities combined with world class outdoor activities will attract a new visitor demographic and operators to the region.

PVR will partner with a range of experience-based operators and guides including; salt and freshwater fishing, mountain biking, hiking and 4WD adventures through rainforests to secluded natural swimming pools & waterfalls.

A base for visitors whilst they experience the best the region has to offer.





## BIKING

85km of world class trails through lush subtropical rainforest.



## FISHING

4 world class impoundments: Kinchant, Teemurra, Eungella and Proserpine.



## HIKING

The Highlands Great Walk is 56 km of trails through the [Crediton State Forest](#) and the [Eungella National Park](#).

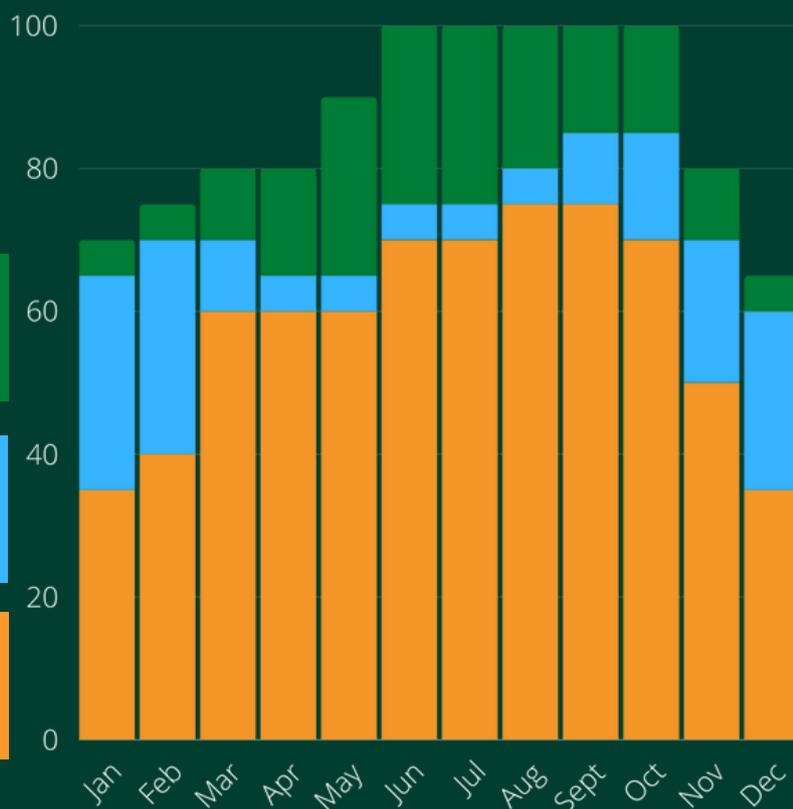
## MARKET SEGMENTS by Month



**HIKING 25%**

**FISHING 15%**

**BIKING 60%**



## IN SUMMARY



### LOCATION

MTB will draw the visitors the Valley will deliver a 6 day ALOS.



### TRAIL NETWORK

Attracting more than MTB enthusiasts - first timers, families, couples young & old.



### TRAIL TOWN

A proven model that attracts visitors and investors.



### EAST COAST

Accessible Wilderness.

## HOW TO REACH US

---

### OFFICE

100 Colemans Rd Carrum Downs 3201

### EMAIL

[michael@marinemedias.com.au](mailto:michael@marinemedias.com.au)

### PHONE

0400 511 190

## Speaker



**Harry Parker is the Robotic Programmer and Draftsperson for the Forge Engineering workshop based in Paget, Mackay. He holds a Bachelor's Degree, majoring in Mechatronics Engineering, minoring in Robotics, and Medical Engineering.**

His role includes all things software, from 3D modelling and 2D drawing of parts, to creating programs that the robot uses for welding.

Harry aids workshop operations by expanding program & spreadsheet capabilities to improve workflows, and recently carried out a smooth transition to new workshop management software.

The 10-axis robot welding system at Forge Engineering is one of the largest ABB installations in Australia.

### Harry Parker

Forge Engineering

#### Contact Details:

 [drafting@forgeengineering.com.au](mailto:drafting@forgeengineering.com.au)

 0428 240 607

 <https://www.linkedin.com/in/harry-parker-no6/>

 [forgeengineering.com.au](http://forgeengineering.com.au)

 [Greater Foundations24 - Forge Engineering Video](#)

[Forge Engineering Robot Photos & Videos](#) \*\*\*

\*\*\* Please note Harry and Forge Engineering have kindly shared these robot photos and videos for use in your classroom however they contain sensitive information about the work done with the robot so must not be shared with anyone but teachers. \*\*\*



**Find additional resources from Harry on the following pages.**

ROBOTIC WELDING  
COMPONENT REPAIRS  
FABRICATION

**FORGE**  
ENGINEERING

CNC MACHINING  
MANUFACTURING  
RECLAMATION

## What we do:

- CNC Milling
- CNC Turning
- Robotic Welding
- Manual Turning
- Manual Welding

We are a 'Job Shop' & see large variety in the parts we make every day. Every job is different to the last, which makes what we do interesting.

## How we do it:

- Computer Aided Drawing
- Computer Aided Machining
- Computer Aided Welding
- Manual Programming

We utilize modern technology to create faster programs, repeatable outcomes and a safer working environment.

## Our Values:

Integrity, Quality, Excellence, Ownership, Safety.

## What we offer:

- School Tours
- Work Experience Weeks
- Apprenticeships

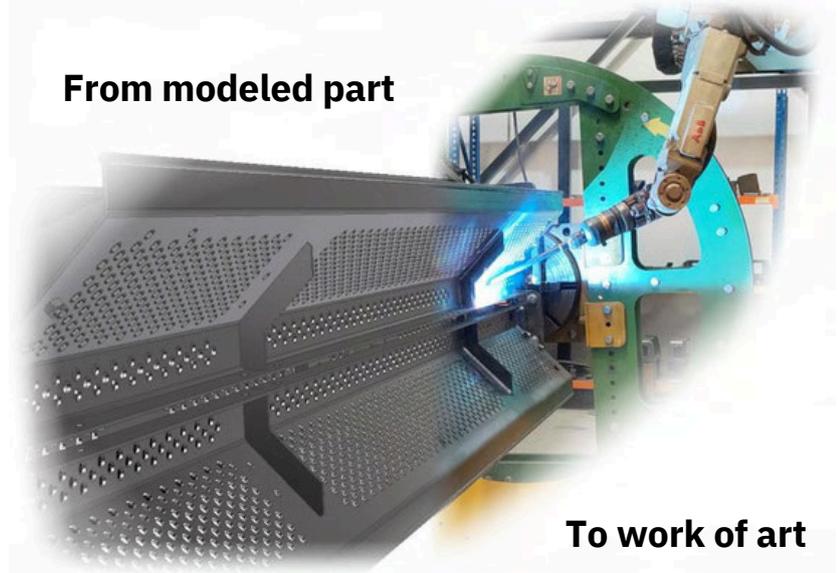
We frequently take school groups for tours of our workshop and are fortunate to have 5 apprentices completing certificate III's with us. We think work experience can be a great way for students to find what they are looking for and experience what the current industry has to offer.

## Any size component



## Any complexity

## From modeled part



## To work of art

## How to get in touch:

Website: [forgeengineering.com.au](http://forgeengineering.com.au)

Phone: 07 4952 6888

To organize school tours, work experience or for further information on our apprenticeship program please contact our general manager:

**Jeff White**

[jeff@forgeengineering.com.au](mailto:jeff@forgeengineering.com.au)

**FORGE**  
ENGINEERING



## Speaker



**Glen Lamb**

DGH Engineering

**Glen Lamb is a Mackay local and is the Quality Assurance Manager at DGH. He has worked for DGH since 2011. During this time DGH has undergone growth with Glen being an instrumental part of this growth**

Being on this journey Glen has seen the importance and benefit of ensuring that practical skills are grown and fostered in the regions.

Glen's main role consists of ensuring that all aspects of the company quality and welding management systems are compliant to Australian and International Standards and assisting with project delivery for both workshop and onsite operations. Glen had a passion for problem solving and uses engineering experience to ensure products and projects success.

Glen has degrees in Mechanical and Welding Engineering and currently the committee chairman of the Mackay / State Committee for Weld Australia.

### Contact Details:

 [glamb@dgh.com.au](mailto:glamb@dgh.com.au)

 0417 745 942

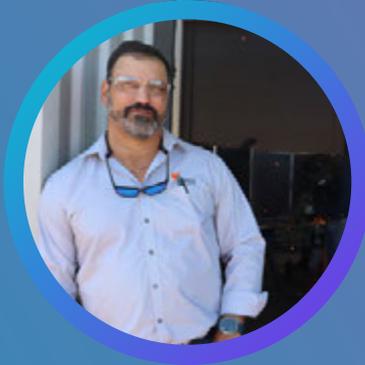
 <https://www.linkedin.com/company/dghengineering/>

 <https://www.dgh.com.au/>



**For additional resources, contact Glen via the above details.**

## Speaker



**Frank Attard**

Key Solutions Group

**Frank Attard is the Managing Director at Key Solutions Group, an engineering services business. Key Solutions Group has been operating for 18 years and has complete end-to-end solutions from engineering, civil/construction and electrical divisions.**

Frank is experienced in the mining and metals industry with strong business development skills. Frank completed his schooling and went on to complete an Associate Diploma in Science with Mackay Sugar where he worked for eight years. He then went on to do a Mechanical Engineering Degree, as well as a Masters in Business whilst working at DBT Australia. Seven years later, Frank took his experience to Key Solutions Group where he works today.

### Contact Details:



f.attard@keysolgroup.com.au



040 809 0811



<https://www.linkedin.com/in/francis-attard-124780a/>



<http://www.keysolgroup.com.au/>



**Find additional resources from Frank on the following pages.**

## CAREER OPPORTUNITIES

Are you ready to take the next step in your career or start your career? We are looking for talented individuals to join our growing team! Whether your just starting out or looking to advance your careers, we have the opportunity for you!



## OUR CAREER PATHS

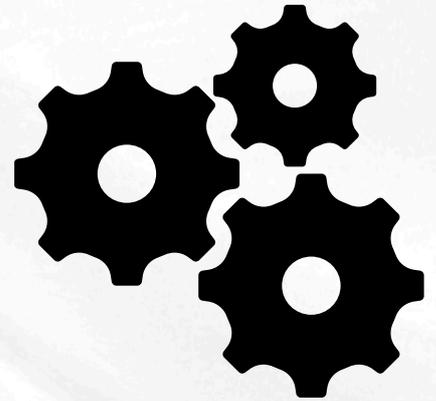
ENGINEERING

DESIGN DRAFTING

BOILERMAKING

MECHANICAL FITTING

ADMINISTRATION



## WORK EXPERIENCE

We encourage school students to try a variety of work experience. Why not consider Key Solutions Group for your next placement!



07 4952 2119



HR@KEYSOLGROUP.COM.AU

# JOIN OUR TEAM



## Workshop Vacancies

- Workshop Rigger/Trade Assistant with Forklift & Intermediate Rigging
- Workshop Boilermakers
- Workshop Fitters
- Workshop Fabrication Supervisor
- Mechanical Coordinator
- Graduate Mechanical Engineer

## Field / Mine Site Opportunities

- Mechanical Engineer
- Site Supervisors - Mechanical or Fabrication
- Site Fitters / Boilermakers
- Site Riggers / TA's with EWP /Forklift

## KSG Civil & Construction

- Expression of interest for upcoming works both in town & onsite
- Concreters / Carpenters-Mine Site or Local
- Civil Engineer



[hr@keysolgroup.com.au](mailto:hr@keysolgroup.com.au)



(07) 4952 2119



KEY SOLUTIONS GROUP

# WE ARE HIRING!

## APPRENTICE FITTER & BOILERMAKER

### 2025 OPPORTUNITY

**Key Solutions Group (KSG)** are a major stakeholder in engineering, projects, overhauls, manufacture, construction & maintenance services for mining, ports, agriculture and utilities industries throughout Central & Northern QLD. We have a superb portfolio of projects and have enjoyed sustainable growth as a result of our reputation, high quality work and commitment to customer satisfaction.

Our Team is expanding and as a result we are currently shortlisting for our **2025 Apprenticeship opportunities**. We are looking for motivated and eager to learn individuals to join our Workshop, our team of highly qualified workshop personnel have extensive experience within their fields, and are ready to train the next generation of quality tradesmen

#### **Selection Criteria:**

- Positive attitude and a willingness to integrate into a close team
- High level of physical fitness
- Sound English and Mathematical abilities
- Understanding of basic hand tooling
- Commitment to upholding a high standard of Workplace Health & Safety
- Comfortable working underground, in confined spaces, and working at heights
- Certificate 2 in Engineering Pathways (advantageous)
- Current C Class Drivers Licence
- Shown interest in your respective field

Send your resume to:

✉ [hr@keysolgroup.com.au](mailto:hr@keysolgroup.com.au)

For more information, visit our web at

🌐 [www.keysolgroup.com.au](http://www.keysolgroup.com.au)

## Speaker



**Chris Monsour**

Prospect Agriculture

**Chris Monsour from Prospect Agriculture is an independent agronomist and agricultural scientist based in Bowen. He has 27 years' experience in agricultural consulting and research, advising horticultural growers on best practices for pest management, soil health, and crop nutrition to enhance yield and sustainability.**

In 2019, Chris and the Prospect Agriculture team were engaged by Top Shelf International to set up the Australian Agave Spirit farm between Bowen and Proserpine and to manage the field operations for the largest agave plantation outside of Mexico. Chris has long been an advocate for providing opportunities for, and mentoring of, the next generation of young agronomists and agricultural scientists to drive the innovation, productivity and sustainability of Australia's agricultural sector. In addition to directly employing a number of university graduates over the years, Prospect Agriculture has also hosted participants from secondary and tertiary work experience programs and was a key collaborator in the 'Greener Futures' and award-winning "WORKfit" programs run by Bowen PCYC.

### Contact Details:



[cmonsour@prospectag.com.au](mailto:cmonsour@prospectag.com.au)



0429 134 537



<https://www.linkedin.com/in/chris-monsour-07578a44/>



<https://www.australianagave.com.au/the-farm>



[Greater Foundations24 - Prospect Agriculture Video](#)

[Agave and agtech. A match made in heaven?](#)



**Find Chris' presentation slides and additional resources on the following pages.**

# Technology Revolutionising Farming: Implications for the Future Workforce

## Smart Drone

for Surveying and fertilizer  
GPS guided Automatically



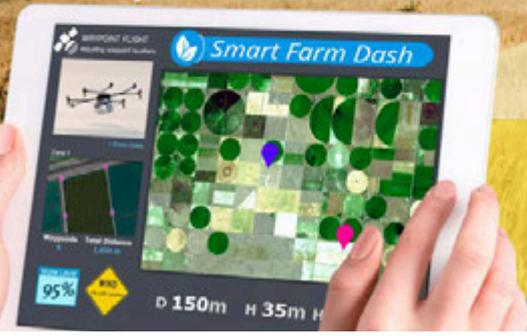
## Smart Machinery

GPS guided and controlled  
Self-driving Systems



## Smart Analysis

Control, Monitoring  
Data processing, collection  
from drones and satellites



80%

90%

Chris Monsour  Prospect Agriculture  
Research...Develop...GROW



# Australian Agriculture

- **Gross value in 2023/24 was \$82 billion**
- **Exports worth \$69 billion**
- **Vital industry for regional economies**

## Agriculture in the Mackay Isaac Whitsunday Region

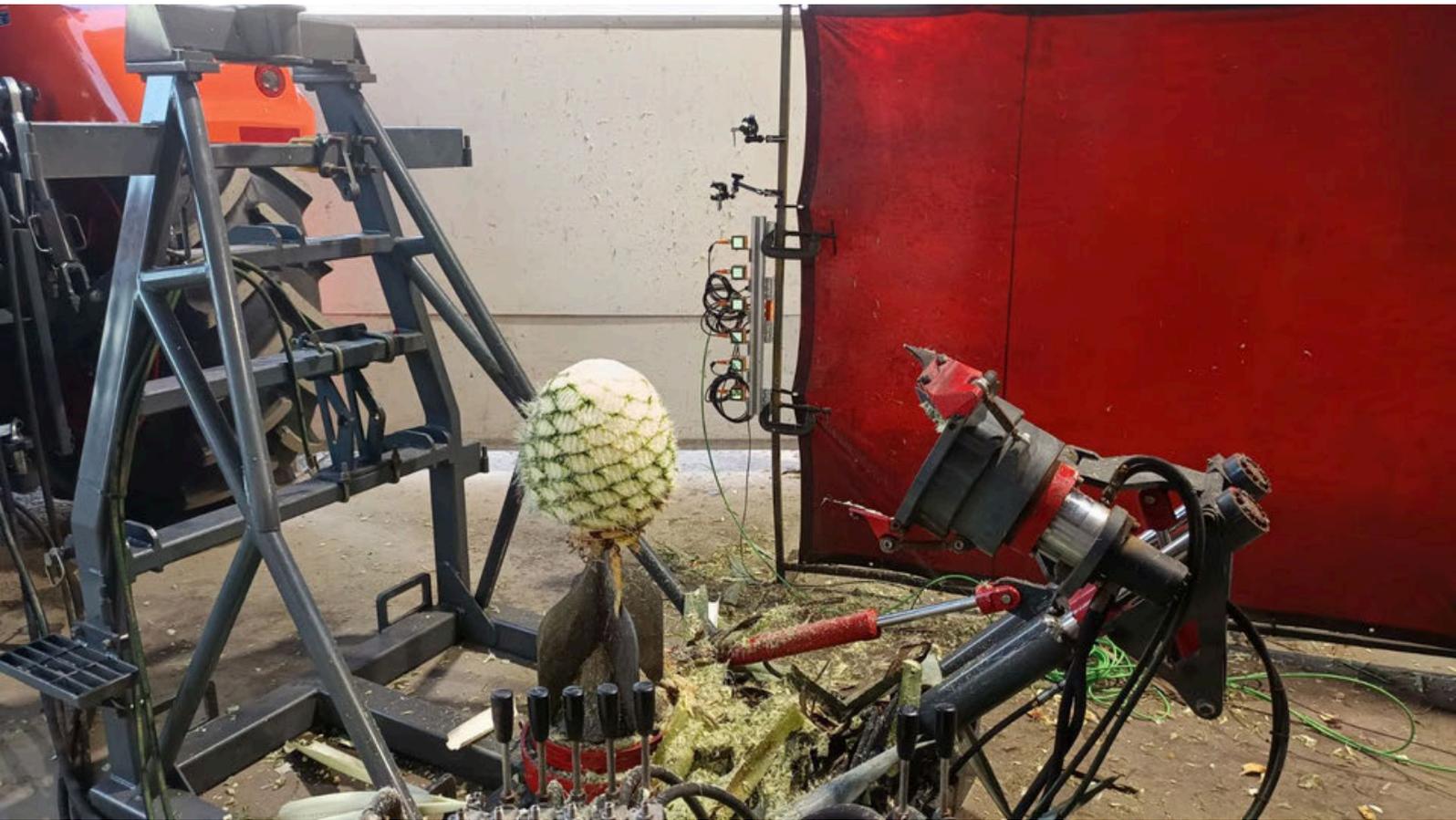
- **Agriculture comprises 89% of the MIW region's land use**
- **Beef, sugarcane, horticulture, grains, aquaculture**
- **MIW accounts for 5% of Qld's land mass but produces 10% of the state's agricultural production**
- **Gross value of ag production of \$1.6 billion in 2020**

# Precision Agriculture



# Automation and Robotics





## Drones and Aerial Imaging





**AIRBORN INSIGHT**  
BETTER DATA. BETTER DECISIONS.

Resolution: 2.5 cm/px

ORTHOMOSAIC

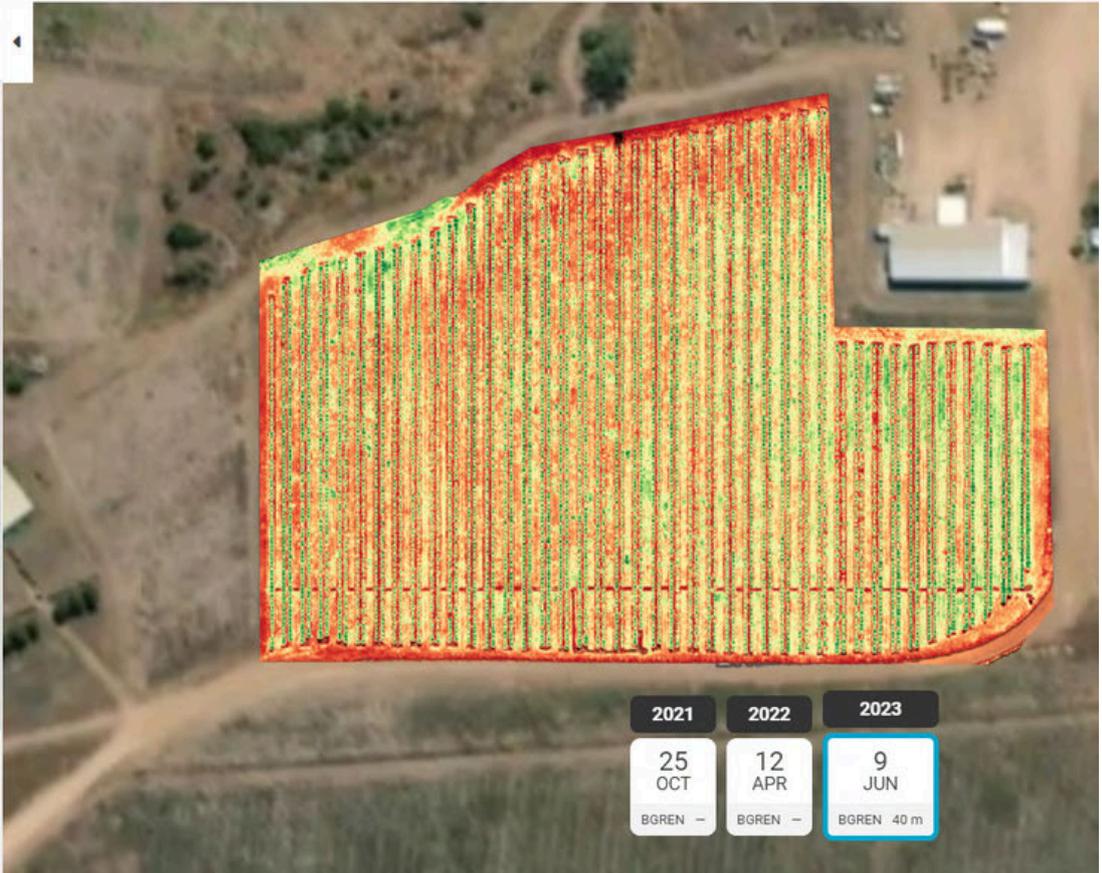
ELEVATION   
 Elevation map is not available for this dataset

PLANT HEALTH

BASED ON SAVI > [Settings]

0.14 0.5 0.62

PRESCRIPTION



**AIRBORN INSIGHT**  
Safer Data. Smarter Decisions.

Elevation map is not available for this dataset

**PLANT HEALTH**

BASED ON SAVI

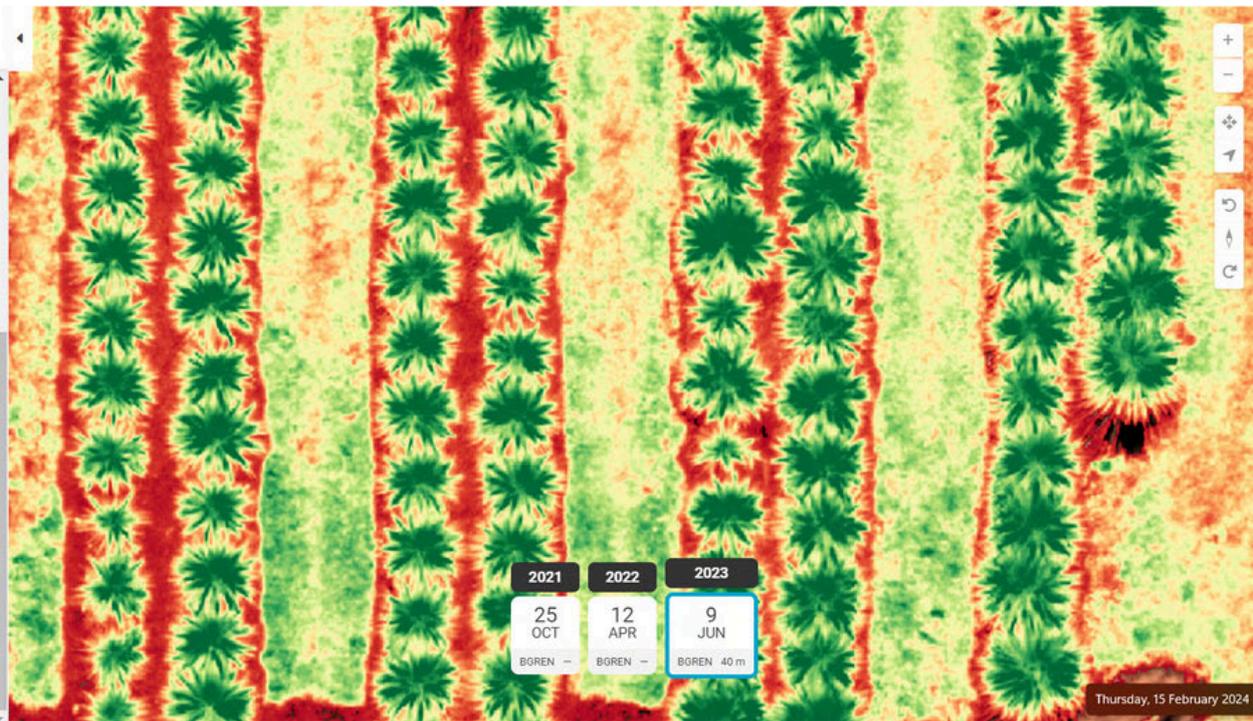
0.14 0.5 0.62

**PRESCRIPTION**

**PLANT COUNTS**

**ZONAL STATISTICS**

**ANNOTATE AND MEASURE**



**AIRBORN INSIGHT**  
Safer Data. Smarter Decisions.

**PRESCRIPTION**

**PLANT COUNTS**

CLASSIFY BY AREA (CM<sup>2</sup>)

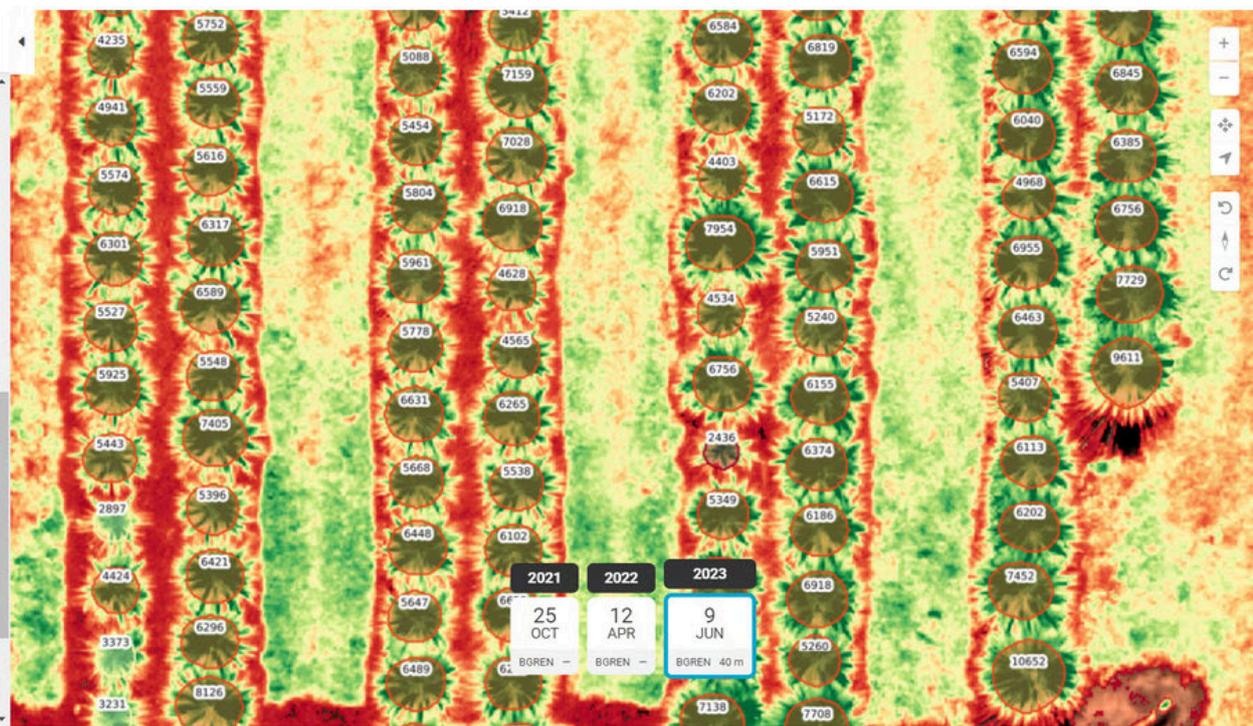
2,000 3,000 4,000 5,000 6,000

2841.3421.74107.8

| Color  | % of Total | Plants |
|--------|------------|--------|
| Red    | 26%        | 2,180  |
| Yellow | 25%        | 2,125  |
| Green  | 25%        | 2,120  |
| Blue   | 24%        | 2,047  |

TOTAL: 8,472 PLANTS  
AVERAGE: 3,392 PLANTS/HA

+ ADD CATEGORY



**AIRBORN INSIGHT**  
Better Data. Better Decisions.

PLANT HEALTH

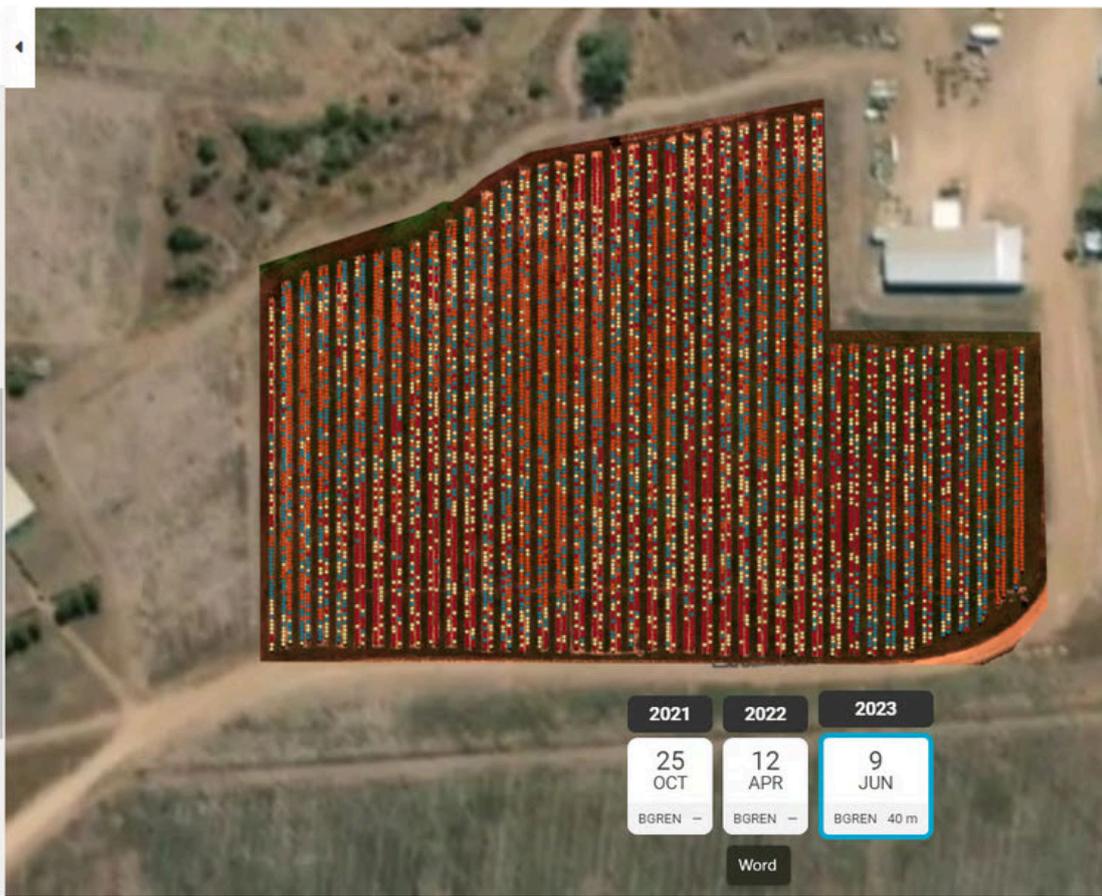
PRESCRIPTION

PLANT COUNTS

CLASSIFY BY AREA (CM<sup>2</sup>)

| Color  | % of Total | Plants |
|--------|------------|--------|
| Red    | 26%        | 2,180  |
| Yellow | 25%        | 2,125  |
| Blue   | 25%        | 2,120  |
| Orange | 24%        | 2,047  |

TOTAL: 8,472 PLANTS



| 2021    | 2022    | 2023       |
|---------|---------|------------|
| 25 OCT  | 12 APR  | 9 JUN      |
| BGREN - | BGREN - | BGREN 40 m |

Word

**Farm Input  
Optimisation**

**Yield  
Prediction**

**Financial  
Performance**

**Food Demand/  
Market Trends**



**Supply Chain  
Management**

**Weather Forecasting  
& Climate Resilience**

**Blockchain**

**Food Safety**

# Novel Farming Practices



# Biotechnology

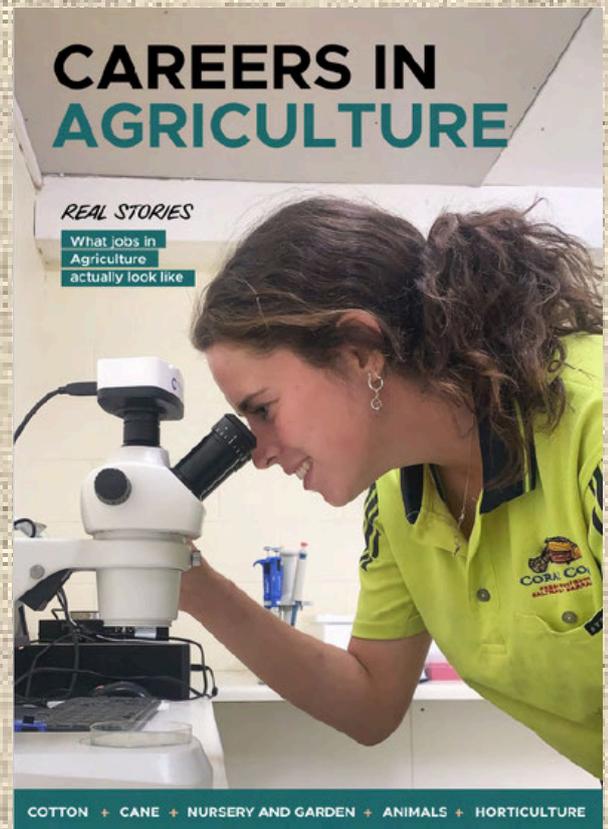


# Changes in Roles due to Ag Tech Adpotion

- Information technology and engineering
  - Software developers, data analysts, data engineers
- Increased specialisation of the ag workforce
- Increased in R&D roles to keep up with advances in tech
- Decreased reliance on unskilled workers (working holiday visa holders) as picking and packing tasks become more automated



# RESOURCES & CONTACTS



## CONTENTS

### CAREERS IN AG.

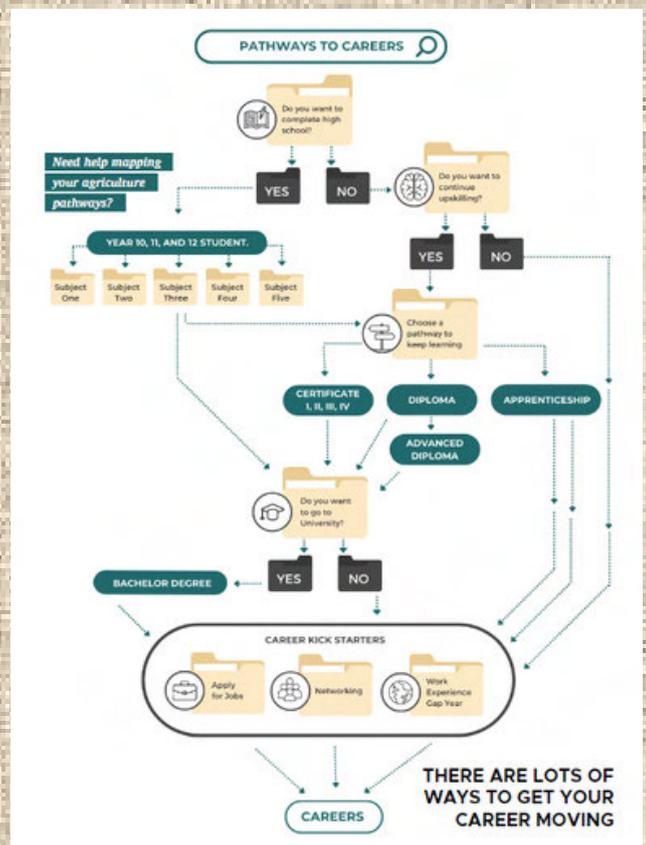
- 4 Your Guide to Careers in Agriculture
- 5 What does Agriculture Offer You
- 6 Lots of Jobs to choose from
- 8 Jobs in Agriculture
- 10 Pathways to Agriculture
- 12 AgCAREERSTART
- 13 The Value of Experience
- 14 Careers with Cows

### REAL PEOPLE

- 16 Josh the General Manager, Conrad the Station Hand and Jemma the Engagement Officer
- 18 Felicity with Sugar Research Australia
- 19 Droning-on about Tech in Agriculture
- 20 Emily the Agribusiness Student & Goat Farmer
- 21 Lucy the Regional Officer
- 22 Agronomy is Growing
- 23 Eduardo the Agronomist
- 24 Kaitlin the Hatchery Technician
- 25 Harry the Sheep Farmer & Business Student
- 26 Andrew the Canegrower & Banana Farmer
- 27 Extension Officer Jasmine
- 28 Agriculture is BIG Business
- 29 Harry the Field Technician

### CAREER PATHWAYS

- 30 Agriculture Education Pathways
- 31 Scholarships in Agriculture
- 32 Pathways to Careers in Cane
- 33 Pathways to Careers in Aquaculture
- 34 Growing a Career in Forestry
- 35 Pathways to Careers in Production, Horticulture, Nursery and Garden
- 36 Pathways to Careers in Cotton
- 37 Decisions about your Career
- 38 What do Employers want?
- 40 Resources for Teachers



# DIVERSITY OF CAREER OPPOTUNITIES

## LOTS OF JOBS TO CHOOSE FROM

With so many job opportunities within the agricultural sector, it's important to choose an agriculture course that aligns with your strengths, values and interests. The range of courses and experience that can create opportunities in these careers is endless, so here is a taster.

### Year 10, Senior Secondary Certificate of Education, or Certificate I or II

|                   |                              |
|-------------------|------------------------------|
| Animal Attendant  | Artificial Insemination Tech |
| Beekeeper         | Dairy Farm Hand              |
| Farm Hand         | Storeperson                  |
| Fish Farm Hand    | Natural Resource Manager     |
| Gardener          | Harvesting Operator          |
| Nursery Assistant | Weed Controller              |
| Shearer           | Slaughterer                  |
| Winery Worker     | Landcare Worker              |
| Abattoir Worker   | Animal Breeder               |

### Certificate III or IV, or relevant experience

|                        |                     |
|------------------------|---------------------|
| Aquaculture Technician | Beekeeper           |
| Cheese Maker           | Forklift Operator   |
| Fish Farm Hand         | Jackaroo - Jillaroo |
| Tree Faller            | Horse Trainer       |
| Forner                 | Park Ranger         |
| Tree Surgeon           | Wool classer        |
| Saw Doctor             | Shearer             |
| Wool Classer           | Stablehand          |
| Facility Supervisor    | Forester            |
| Irrigationist          | Fisheries Officer   |
| Weed Controller        | Laboratory worker   |

### Diploma or Advanced Diploma

|                           |                          |
|---------------------------|--------------------------|
| Agriculture Tech. Officer | Animal Technician        |
| Aquaculture Technician    | Dairy Technician         |
| Farmer                    | Farm Manager             |
| Fisheries Officer         | Forest Technical Officer |
| Geographic Information    | Horse Manager            |
| Tradesperson              | Laboratory Worker        |
| Resource Manager          | Natural Therapist        |
| Park Ranger Surveyor      | Wool classer             |
| Supply Chain Manager      | Stablehand               |
| Horse Trainer             | Timber Production        |
| Warehouse Manager         | Logistical Managers      |
| Weed Controller           | Beekeeper                |
| Pilot                     | Winery Worker            |

### Bachelor Degree or higher

|                         |                         |
|-------------------------|-------------------------|
| Agriculture Economist   | Agriculture Engineer    |
| Agricultural Scientist  | Agronomist              |
| Biotechnologist         | Botanist                |
| Chemical Engineer       | Chemist                 |
| Civil Engineer          | Ecologist               |
| Environmental Engineer  | Conservation Officer    |
| Environmental Scientist | Agricultural Consultant |
| Geologist               | Geophysicist            |
| Hydrogeologist          | Horticulturist          |
| Landscape Architect     | Marine biologist        |
| Meteorologist           | Microbiologist          |
| Mining Engineer         | Natural Therapist       |
| Resource Manager        | Surveyor                |
| Toxicologist            | Urban Planner           |
| Viticulturist           | Zoologist               |



[bgga.com.au/qwan/](http://bgga.com.au/qwan/)



Sugar industry – virtual bus tours  
<https://www.canegrowers.com.au/page/videos>



[Qff.org.au](http://Qff.org.au)



[Tafeqld.edu.au](http://Tafeqld.edu.au)



Find a Career in Agriculture

HOME CAREERS ▾ SCHOLARSHIPS ▾ AgCAREERSTART ▾ AG JOBS ▾ CAREER VIDEOS ▾ TEACHERS CONTACT ▾

[Careerharvest.com.au](http://Careerharvest.com.au)

# WORK EXPERIENCE / SCHOOL HOLIDAYS



# Careers in Agriculture – Links to Resources

## QLD Government

<https://www.daf.qld.gov.au/news-media/campaigns/agtech/education>

Bring AgTech into the classroom at your school by applying for support and funding of up to \$10,000 through the [Agribusiness Gateway to Industry Schools Program](#).

<https://youtu.be/bPdVuJ2XHRs>

## AgTech Road Map

<https://www.daf.qld.gov.au/news-media/campaigns/agtech/about/roadmap>

The Queensland AgTech Innovation ecosystem will:

- support future career pathways into AgTech by working with stakeholders to understand current and future training needs, and advocating for the inclusion of AgTech in training and skilling programs.
- undertake skills and training gap analysis highlighting existing support and opportunities for future education programs and career pathways in AgTech
- promote the diversity of emerging AgTech roles to attract and retain talent and skills in Queensland
- attract the next generation talent pipeline by leveraging school programs to expose students to AgTech training and work experience
- empower agribusinesses to support First Nations innovators, entrepreneurs and new entrants to grow a career within the sector through AgTech pathways
- increase agribusinesses' understanding of AgTech and digital literacy, including cybersecurity, and investigate approaches to increase capability through extension, training and business support services.

## Queensland Agriculture Workforce Network

The Queensland Agriculture Workforce Network is an industry-led rural jobs and skills initiative. Agricultural Workforce Officers work in seven different regions throughout the state to attract, retain and up-skill local Ag workforces.

Bowen Gumlu Growers Association is privileged to host a QAWN Officer for the North Qld region. For QAWN enquiries, please contact BGGGA's Workforce Development Officer, Gillian Russell on:  
ph: 0427 009 929  
email: [workforce@bowengumlugrowers.com.au](mailto:workforce@bowengumlugrowers.com.au).

## Queensland Farmers Federation

The Queensland Farmers' Federation (QFF) is the united voice of agriculture in Queensland, representing the collective interests of peak agriculture industry

organisations (both state and national) to build a strong future for Queensland's agriculture sector.

### **Agricultural Extension Work Placement Program**

<https://www.qff.org.au/projects/agricultural-extension-work-placement-program/>

The Agricultural Extension Work Placement Program (AEWPP) connects early career extension professionals with host agribusinesses or natural resource management organisations to assist landholders in the Great Barrier Reef catchment.

Work placement positions are open to recent graduates from university and other institutions or those from other fields of expertise who wish to become an extension officer.

### **AgTech Officer Placement Program**

<https://www.qff.org.au/projects/agtech-officer-placement-program/>

The Queensland Farmers' Federation (QFF) is connecting graduates or people working in IT/technology and agriculture related fields to accredited training, mentorship, and networking opportunities.

We're looking for Agricultural Digital Technology Support Officers (AgTech Officers) to complete a 12-month work placement program commencing in the second half of 2024.

### **Career Harvest**

<https://www.careerharvest.com.au>

Career Harvest is a one-stop shop for prospective students to discover rewarding careers in Agriculture. A project of the Australian Council of Deans of Agriculture, the Department of Agriculture, Water & the Environment, and the Primary Industries Education Foundation Australia (PIEFA)

In addition to its comprehensive website it has an excellent e-magazine focussing on career opportunities in the agriculture industry.

<https://www.careerharvest.com.au/wp-content/uploads/2022/10/FINAL-QFFCareersInAgriculture.pdf>

### **Bowen Gumlu Growers Association**

<https://www.bgga.com.au/>

Bowen Gumlu Growers Association (BGGA) is a regional industry body that represents the interests of our members, horticultural growers, producers and associated agribusinesses in North Queensland. BGGA's key activities include member services, advocacy, workforce and industry development and the delivery of

projects focused on improving on-farm practices, commercial outcomes for farming businesses and the prosperity of our regional community.

The region is the largest producer of winter vegetable crops in Queensland generating farm gate production worth approximately \$650m per annum. Key commodities produced include tomato, capsicum, mangoes, cucurbits, beans and corn. Our growers employ approximately 1,500 workers throughout the year with an additional 2,000 during the harvest season. One in every five workers living in the region are supported by the sector.

## **Canegrowers**

CANEGROWERS is a not-for-profit public company providing a professional and cohesive voice for the members of 13 local grower companies, located in all of the sugarcane regions of Queensland.

<https://www.canegrowers.com.au/page/resources/student-resources>

### **CANEGROWERS Virtual Bus Tour**

<https://www.canegrowers.com.au/page/videos>

This is a collection of videos to take you on virtual farm visits. Type topics into the search boxes or browse the list to find Queensland sugarcane farms and growers to 'visit'.

## **TAFE QLD**

### **Aquaculture and Agriculture Tech Skills Hub:**

<https://tafeqld.edu.au/campaigns/aquaculture-and-agriculture-tech-skills-hub>

The Aquaculture and Agriculture Tech Skills Hub offers a range of micro-credentials that are developed in partnership with industry and designed to provide valuable information on new and emerging areas. The purpose of these micro-credentials is to enable participants to learn more about working in the aquaculture and agriculture industries. Delivered online via a self-paced delivery mode, micro-credentials offer a flexible and accessible way to study and gain a recognised learning outcome and digital badge.

### **Aquaculture and Agriculture Taster days for school students**

(Bowen & Cannonvale Tafe Campus)

Explore the fascinating world of agriculture and aquaculture, discover cutting-edge technology and learn about the exciting career opportunities in your region. Engage in interactive science activities, augmented and virtual reality, farm robotics and drone demonstrations.

## **Certificates in Agriculture and Aquaculture:**

Information on the Cert II in Aquaculture and Rural Ops (Autonomous).

For more information, contact Julia Wheway – 0460 406 593,  
[Julia.wheway@tafeqld.edu.au](mailto:Julia.wheway@tafeqld.edu.au)

## **Ag Career Start**

<https://agcareerstart.com.au>

If you're 17-25, this unique gap-year program provides you with a paid job, training and development, not to mention the opportunity to build your networks within the agriculture industry. Applicants can indicate which farm type they'd prefer from a wide variety, and also where in Australia they would ideally like to go. A matching process is undertaken to ensure participants are assigned to the type of farms that match their interests and skills.

- Full-time paid farm job with a passionate host farmer
- A \$4,500 Training and Engagement Bursary to upskill yourself
- Funding to travel for industry events
- A dedicated support team
- A network of peers across the country

## **Grown In NQ 2024 – Ag Innovation Conference and Trade Show**

31st October – 1st November 24, Bowen

The Grown in NQ Innovation Day is an exciting event where school students and educators are invited to explore the dynamic world of agriculture. Attendees will have the opportunity to learn about cutting-edge technologies shaping the future of farming, including farm robotics, drone technology, automation, and biological control. This hands-on experience aims to inspire the next generation by showcasing how innovation and technology are transforming agriculture, making it more efficient, sustainable, and environmentally friendly.

## **University of Queensland**

UQ Skills

<https://uqskills.uq.edu.au/>

## **Queensland Beef Processing Industry**

<https://www.queenslandbeef.com.au/working-in-qld>

<https://www.queenslandbeef.com.au/careers>

## Speaker



### Robert Petherbridge

TAFE Queensland

**Robert is passionate about innovation and ensuring that vocational education and training continues to evolve and stay in front of the curve with contemporary research and approaches to skills and workforce development which build capacity in communities and the economy.**

Responsible for establishing and now managing TAFE Queensland's Commercial Business Portfolio, Robert has brought a range of new tertiary education and training products and services to market over the last five years working across a range of industries including mining, METS, agriculture and aquaculture just to name a few. Robert is TAFE Queensland's Lead Education Partner for the Queensland Future Skills Partnership which has fast-tracked the development and delivery of new autonomy-related qualifications and skilling programs in the mining, equipment, technology and services sector.

#### Contact Details:

 [robert.petherbridge@tafeqld.edu.au](mailto:robert.petherbridge@tafeqld.edu.au)

 [07 3514 3603](tel:0735143603)

 <https://www.linkedin.com/in/robert-petherbridge-a4511216/>

 [tafeqld.edu.au](http://tafeqld.edu.au)

 [Skilling Queenslanders – now and into the future | Queensland Workforce Strategy](#)



**Find additional resources from Robert on the following pages.**

# TASTER PROGRAMS FOR INDUSTRY 4.0 AND AUTONOMOUS TECHNOLOGIES

Preparing students for the jobs of the future, today



Developed by the Queensland Future Skills Partnership led by BHP Mitsubishi Alliance, our range of micro-credentials provide students with lifelong learning skills to pursue pathways into further vocational or tertiary studies, as well as the skills required to work in a range of new and emerging technologies.

## Industry 4.0 micro-credentials



### Adapt, Collaborate and Communicate

Gain an understanding of the dynamic work environment and the skills required to effectively uptake new communications and technologies in this innovative course.



### Autonomous Environments in the Value Chain

Autonomous supply chains are the steps in the process to move goods without human intervention. This course provides an introduction to the autonomous value chain concept and process.



### Cyber Security

Cyber threats are becoming more frequent and advanced. This course introduces the current and emerging trends in cyber security, secrecy protection techniques and availability of computer systems and data.



### Data Fundamentals in Autonomous Environments

Data is the basis of working successfully in autonomous environments. Providing an introduction to different types of data, this course explains the importance of data in automated workplaces.



### Digital Transformation

Understanding and adapting to digital transformation technologies is an important skill. The course introduces digital transformation technologies in the fields of AI, Industrial automation and robotics.



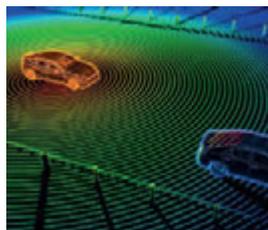
### Network Fundamentals

Gain an understanding of the important use of network concepts, types, terminologies and security protocols and learn about emerging concepts for future networking and automation.



### New Technology

Technology is an ever-changing world of new innovations and initiatives. Gain an understanding of artificial intelligent components and the use of statistics and algorithms to find patterns using machine learning technologies.



### Positioning Basics

Positioning technologies determine the location and movements of people or equipment. This course delivers a practical overview of positioning technologies; what they are and how they are used.



### Safety Fundamentals in Autonomous Environments

Gain an understanding of the different safety requirements and documentation required for autonomous systems and components and the benefits they bring to the workplace.



### Work Effectively in Autonomous Environments

An automated workplace uses technology to make equipment, a process or a system operate automatically. This course introduces the concepts and benefits of automation which improve workplace outputs.



# TASTER PROGRAMS FOR INDUSTRY 4.0 AND AUTONOMOUS TECHNOLOGIES

Preparing students for the  
jobs of the future, today



## Queensland Future Skills Partnership

The Queensland Future Skills Partnership is led by BHP Mitsubishi Alliance and includes TAFE Queensland and CQUniversity Australia as education partners. The partnership has brought together industry leaders, researchers, and government to co-design and deliver a range of new training programs to prepare the mining, equipment, technology and services sector workforce for emerging skills demands and the employment opportunities of Industry 4.0.

## Taster programs and delivery options

We offer a range of customisable delivery options to cohorts of 10 or more through a blended delivery combining face-to-face training with online study.

- One micro-credential delivered over a half day workshop.
- Any two micro-credentials delivered over a full-day workshop.
- Training can be delivered onsite at your location, or at your nearest TAFE Queensland or CQUniversity Australia campus.
- Your teaching staff can be provided with the learning content to deliver themselves, or our team of experienced trainers can run the training for you.
- We can deliver to groups of teachers as a professional development activity, or to mixed classes of teachers and students to give your educators the knowledge and confidence to run programs in the future.
- Micro-credentials can be provided as online-only delivery, or a blend of online learning and virtual instructor-led workshops.

We're pleased to offer our micro-credential taster programs to your students at no charge thanks to the investment from BHP Mitsubishi Alliance and the Queensland Resource Industry Development Plan.

## Make your school a leader in the jobs of the future

These taster programs are a perfect pathway into the new 10935NAT Certificate II in Autonomous Technologies – a brand new program that's part of the \$2.5 million suite of products developed through the Queensland Future Skills Partnership. Students completing the 10935NAT Certificate II in Autonomous Technologies will receive automatic advanced standing for apprenticeship and employment opportunities with some of Queensland's leading mining and equipment manufacturers.

## Get in touch

Contact us today to discuss how our customisable industry 4.0 and autonomous technologies training options can help prepare your students for the jobs of the future.

**Email us at: [corp-train@cqu.edu.au](mailto:corp-train@cqu.edu.au)**



# 10935NAT CERTIFICATE II IN AUTONOMOUS TECHNOLOGIES



Develop foundation skills in new technologies required to work in autonomous environments. This qualification will provide you with further education pathways across a range technical, engineering, trade and information communication technology, and related industries.

Prepare yourself to work in with Autonomous Technologies and related industries with this new qualification. Throughout the course, you will develop a broad range of skills driven by the introduction of new technologies as a result of industry 4.0. Employers will increasingly need workers to be equipped with skills in software, hardware and supporting systems required for autonomous environments.

During this course you will develop innovative thinking and problem-solving skills and develop foundational skills in information communication technologies including networking, programming and Internet of Things (IoT) and autonomy and robotics including electrical control circuits, fluid power, Programmable Logic Controller (PLC) and schematics and systems documentation.

## Core Units (14)

- NAT10935001 Work effectively in autonomous environments
- NAT10935002 Handle technical communication in autonomous environments
- NAT10935003 Design basic fluid power logic diagrams for autonomous systems
- NAT10935004 Design basic logic ladder diagrams for autonomous electric control circuits
- NAT10935005 Produce a documentation suite for autonomous systems
- NAT10935006 Configure autonomous embedded systems
- NAT10935007 Prepare basic programs for programmable logic controllers (PLCs) for autonomous applications
- NAT10935008 Use basic positioning technology
- NAT10935009 Conduct a basic autonomous technology project
- VU22338 Configure and program a basic robotic system
- ICTTEN205 Build and maintain a secure network
- MSMWHS200 Work safely
- MSMSUP390 Use structured problem-solving tools
- ICTPRG302 Apply introductory programming techniques

## Electives (select 2)

- MSMWHS201 Conduct hazard analysis
- ICTNWK308 Determine and action network problems
- ICTSAS304 Provide basic system administration
- ICTSAS309 Maintain and repair ICT equipment and software
- VU22825 Perform basic computer system and network maintenance and upgrades
- RIIRIS201E Conduct local risk control

*On completion of this course, you will have a solid foundation to advance your career by continuing with further study and training. Successful completion of this course may qualify you for entry-level roles in the Mining and related MET's industries.*

*QCE points: 4*

*Information is current at time of publishing, to confirm the QCE points for your course please speak to your high school guidance counsellor or careers advisor, or visit the Queensland Curriculum & Assessment Authority (QCAA) website.*



# Aquaculture and Agriculture Tech Skills Hub

Delivering new workforce training solutions to Queensland's  
Aquaculture and Agriculture Industries





### **Aquaculture and Agriculture Tech Skills Hub**

The Aquaculture and Agriculture Tech Skills Hub is jointly funded by the Australian Government under the Regional Recovery Partnerships, Greater Whitsunday Alliance (GW3) and Regional Development Australia, and is being delivered in partnership with the Queensland Government, TAFE Queensland and CQUniversity Australia.

Through significant consultation with industry subject-matter experts, community and government, the partnership has developed a Qualification Framework including micro-credentials, an accredited skillset and three entry-level qualifications, providing critical skills including digital, technology and work skills for current and future roles across the Agriculture and Aquaculture industry sectors.

## SFI20119 Certificate II in Aquaculture

The Certificate II in Aquaculture is an entry-level course designed to equip students with a range of practical and technological skills required to work in the Aquaculture industry. Students will learn how to interact with aquatic technology, maintain the water environment and participate in environmentally sustainable practices.

### Core

- SFIAQU202 Handle Stock
- SFIBIO201 Inspect and clean aquatic work equipment
- SFIWHS201 Meet workplace health and safety requirements
- SFIXSI102 Communicate in the seafood industry
- SFIXSI201 Work effectively in the seafood industry

### Electives

- SFIAQU204 Undertake routine maintenance of water supply and disposal systems and structures
- SFIAQU207 Monitor stock and environmental conditions
- SFIAQU212 Operate and maintain a recirculating aquaculture system
- SFIAQU217 Feed stock
- SFIAQU218 Prepare and use aquatic technology
- SFIBIO301 Identify and report signs of aquatic disease or pests
- SFIEMS201 Participate in environmentally sustainable work practices

## AHC21216 Certificate II in Rural Operations

The Certificate II in Rural Operations is an entry-level course designed to equip students with the practical skills needed to work across a variety of existing and emergent roles in the agricultural sector. Students will learn how to operate a variety of agriculture equipment, operate GPS devices and develop foundational skills in autonomous technologies and robotic systems.

### Core

- AHCWRK209 Participate in environmentally sustainable work practices
- AHCWRK204 Work effectively in the industry
- AHCWHS201 Participate in work health and safety processes

### Electives

- AHCWRK205 Participate in workplace communications
- AHCCHM201 Apply chemicals under supervision
- AHCMOM203 Operate basic machinery and equipment
- AHCLPW201 Operate a handheld GPS device
- AHCECR201 Capture digital media for fieldwork
- AHCSOL203 Assist with soil or growing media sampling and testing
- AHPCPM204 Recognise plants
- ICTPRG302 Apply introductory programming techniques
- NAT10935005 Produce a documentation suite for autonomous systems
- NAT10935006 Configure autonomous embedded systems
- NAT10935007 Prepare basic programs for Programmable Logic Controllers (PLCs) for autonomous applications
- VU22338 Configure and program a basic robotic system

## 10935NAT Certificate II in Autonomous Technologies

The Certificate II in Autonomous Technologies is an entry-level course that equips students with a broad range of skills driven by the introduction of new technologies as a result of industry 4.0. Students will develop innovative thinking and problem-solving skills and foundational skills in information communication technologies including networking, programming and Internet of Things (IoT) and autonomy and robotics.

### Core

- NAT10935001 Work effectively in autonomous environments
- NAT10935002 Handle technical communication in autonomous environments
- NAT10935003 Design basic fluid power logic diagrams for autonomous systems
- NAT10935004 Design basic logic ladder diagrams for autonomous electric control circuits
- NAT10935005 Produce a documentation suite for autonomous systems
- NAT10935006 Configure autonomous embedded systems
- NAT10935007 Prepare basic programs for Programmable Logic Controllers (PLCs) for autonomous applications
- NAT10935008 Use basic positioning technology
- NAT10935009 Conduct a basic autonomous technology project
- VU22338 Configure and program a basic robotic system
- ICTTEN205 Build and maintain a secure network
- MSMWHS200 Work safely
- MSMSUP390 Use structured problem-solving tools
- ICTPRG302 Apply introductory programming techniques

### Electives

- MSMWHS201 Conduct hazard analysis
- ICTNWK308 Determine and action network problems

## Aquaculture Technology Skillset

The Aquaculture Technology skillset has been designed to upskill existing workers within the Aquaculture Industry. Students will learn how to operate hi-tech and real time aquatic technology, and plan and monitor feed activities for cultured aquatic stock.

- SFIAQU313 Operate hi-tech and real time aquatic technology
- SFIAQU312 Monitor feed activities



## Micro-credentials

The following micro-credentials are on-line and self-paced, making them a flexible and accessible way to study and gain a recognised learning outcome and digital badge.

### Digital Skills



Adapt, Collaborate and Communicate

Gain an understanding of the dynamic work environment and the skills required to effectively uptake new communications and technologies in this innovative course.



Collect, Record and Manage Data

Data is a valuable resource that helps to make better decisions, improve processes and enhance innovations. This course provides an overview of data analysis and interpretive techniques that can be applied to produce meaningful results.



Communication Technologies for Business Success

This course identifies communication tools and correct etiquette including email, instant messenger and video calling applications and investigates the key aspects of social media and how to use technology applications.



Cyber Security

Cyber threats are becoming more frequent and advanced. This course introduces the current and emerging trends in cyber security, secrecy protection techniques and availability of computer systems and data.



Cyber Security Essentials

Learn how to identify potential threats and how to avoid them and techniques on how to stay safe at home and in the workplace. This course debunks myths, identifies facts, and highlights the most common cyber-attacks.



Data Security Essentials

Gain an understanding of the key components of data security, its importance and how data should be maintained. Identify common types of incidents, data security versus cyber security and an understanding of how breaches can happen.



Digital Data Essentials

Gain an understanding of the techniques used for identifying qualitative and quantitative data and recognising patterns. This course provides an understanding of the basics of data, its history, why data is used and how it is collected.



Digital Literacy Essentials

Digital literacy is essential for employability, productivity, and effective communication. This course identifies the key aspects of communicating and collaborating using different devices and provides an understanding of the different types of hardware, software, and operating systems.



Digital Technologies in Agriculture and Aquaculture

Digital technology is essential to growth within the agriculture and aquaculture sector. This course introduces the common terms, technologies and methods used within the industry and the relevant hardware and software available.



Programmable Logic Controller (PLC)

Programmable logic controllers (PLCs) are a vital tool for automating and improving aquaculture and agriculture processes. Gain an understanding of how PLCs work, the tasks they can perform and basic troubleshooting techniques.



The Internet of Things

This course provides an overview of how the IoT is structured and the value and benefits of these technologies through examples of how these technologies are applied in industry.



Use Digital Technology for Routine Tasks

Gain an understanding of how contemporary agriculture and aquaculture practices are being used to enable routine tasks to become more accurate and efficient and the role of digital technologies to safely manage production.

## Work Skills

### Change Management



Change management is critical for improvement and growth in a rapidly changing world. Gain an understanding of how to implement team changes, communication techniques and how to monitor and improve changes once implemented.

### Cultural Inclusiveness



The Aboriginal and Torres Strait Islander peoples in the workplace micro-credential provides employers with the necessary context, practical skills, and knowledge to foster effective workplace communication and strategies to support positive working relationships.

### Effective Workplace Leadership



Gain an understanding of a range of different styles of leadership and the skills and knowledge that can be used to enhance and define your own leadership style. Learn how to apply different styles of team leadership and tips and tools to apply the skills and knowledge developed.

### Environmental Sustainability



Sustainability is an important aspect of business activities to help protect the environment and reduce the impact on the ecosystem. Gain an understanding of sustainable development goals and environmental protections that are in place to support future generations.

### Interact Effectively with Others at Work



Effective interaction helps each team member become an active contributor to a positive team culture. This course delivers the principles of communication, understanding different styles and methods and techniques to overcome workplace conflict.

### Quality Assurance and Compliance



Quality assurance and compliance play vital roles in ensuring the success, constancy and credibility of workplaces. The course delivers the knowledge to establish, identify, and implement quality assurance systems, standards, and controls in the workplace.

### Recruitment for Small Business



This course provides small businesses with knowledge and practical steps to enable effective workforce planning and legal and effective recruitment.

### Risk Management



A proactive approach to risk management ensures all employees are safe within the agriculture/aquaculture industries. Gain an understanding on how to identify and understand risk potentials, their impacts and consequences.

### Rural Electrical Safety Awareness



This course is for any person required to work near live overhead electric lines, underground cables and associated electrical apparatus, including the agricultural sector and in rural environments, and not limited to vegetation control, scaffolding, rigging, painting and general maintenance.

### Work Effectively in Industry



An effective workplace is better equipped to adapt, innovate and improve performance and productivity. This course provides techniques to improve the quality of work, understand a team environment, set and achieve goals, identify priorities and develop schedules.

### Work Safely Fundamentals



Working in an environment that prioritises the safety of workers reduces accidents, enhances morale and creates a positive company culture. This course provides an overview of how to work safely and identify organisational safety and reporting requirements.

### Workplace Resilience and Wellbeing



This course provides an understanding of how establishing and building resilience and wellbeing can benefit and create a healthy workplace, using practical tips and supports for small businesses.

Technology Skills

Diagnostics and Fault Responses



Gain an understanding of how to identify a fault or problem and basic troubleshooting processes for the proactive management of faults and addressing issues.

Drones – Use and Maintenance



This course provides the knowledge to assist personnel in the safe, effective, and responsible operation of unmanned vehicles. Gain an understanding of how to perform basic maintenance for optimal functionality and extended life of unmanned vehicles.

Geospatial



Geospatial technology can be used for positioning, surveying and mapping activities in agriculture and other industries. This course provides an overview on the advantages, challenges and future innovations in geospatial technologies.

Introduction to Autonomous Equipment



The trend of autonomous equipment use in agriculture will continue to grow in the future. Gain knowledge on the development of autonomous systems and technologies in farming and changing food production practices.

Operate Basic Machinery and Equipment



Effective operation of basic machinery can assist in improved job opportunities and career advancement in agriculture. This course provides an overview of how to undertake pre-start checks, maintain, operate, and shut down basic machinery and equipment.

Positioning



Positioning technologies are invaluable tools to determine the location and movements of people or equipment. This course provides an overview of positioning technologies, what they are and how they are used.

Precision Farming



Precision farming is an exciting and innovative approach to optimise agricultural practices. Gain an understanding of the concept of precision farming and the types of current and emerging techniques used in farming practices.

Sensors and Monitoring Devices



Sensors and monitoring devices play a critical role in decision-making, safety and environmental sustainability. This course provides an overview of how sensors work and the tasks they can perform to provide better industry outcomes.

Supervisory Control and Data Acquisition (SCADA)



SCADA systems are critical technology to enhance the safety, efficiency and reliability of operations. Gain an understanding of how systems are controlled and managed, specific networks, communications abilities and security aspects.

Undertake Operational Maintenance



Operational maintenance is necessary to ensure the proper functioning and longevity of machinery, equipment, and systems. Gain knowledge to undertake operational maintenance, preparations and checks for basic machinery and equipment.

Learn more



RTO 0275 | CRICOS 03020E | PRV13003

For further information on the Aquaculture and Agriculture Tech Skills Hub micro-credentials please contact us at [tqcommercial@tafeqld.edu.au](mailto:tqcommercial@tafeqld.edu.au)



## Speaker



### Raquel Bailey

BHP (Future Fit Academy)

**Raquel graduated from Macquarie University in 2010 with Bachelors Degree in Human Resource Management. Raquel was a Change Management Consultant with professional services firm Accenture for 5 years post graduating, where she worked with a number of Mining, Government and Products companies on Organisational Change projects.**

Raquel joined BHP in 2015 as a Maintenance Process Coach. She has since predominantly held leadership positions in the business at both a Superintendent and Manager level, in Maintenance Planning and Maintenance Execution. Raquel has also worked on some large organisational change projects for BHP including, the centralisation of Maintenance Planning for Minerals Australia and the global restructure for Inventory. Presently, Raquel is the Superintendent in the Mackay Future Fit Academy, where she is responsible for the BHP's Maintenance Trainee programs, in which approximately 170 students are currently enrolled.

#### Contact Details:



raquel.bailey@bhp.com



0459 995 954



<https://www.linkedin.com/in/baileyraquel/>



<https://www.bhp.com/careers/global-careers/careers-in-australia/operations-services/bhp-futurefit-academy>



[FutureFit Academy - Meet some of our FutureFit students](#)



**For additional resources, contact Raquel via the above details.**