

Starting Out!

An Introductory Guide to Farming
in the Byron Shire



Contents

- 3 Our Cultural Heritage**
- 4 Pre-European Farming**
- 5 Introduction** • Welcome to the Byron Region!
- 6 Chapter 1** • History of European Agriculture in the Byron Region
- 8 Local Story** • Rainforest Foods: Value-Adding Australian Native Foods
- 11 Chapter 2** • Byron Shire Rural Land Use
- 15 Local Story** • Sourdough Business Women
- 17 Chapter 3** • Before You Buy
- 20 Local Story** • Frida's Field: Diversifying Income Streams on Small Farms
- 23 Chapter 4** • Making a Living on Small Farms
- 26 Local Story** • The Value of our Local Food Networks: Pam Brook, Northern Rivers Food
- 29 Chapter 5** • Looking After the Land
- 34 Local Story** • Dingo Lane Farms: Promoting Biodiversity on Farms for Sustainability
- 37 Chapter 6** • Biosecurity on Farms
- 39 Local Story** • Brunswick Valley Landcare: Conserving and Restoring From Forest to Foreshore
- 41 Chapter 7** • Chemical Safety on Farms
- 45 Chapter 8** • Managing Waste on Farms
- 48 Local Story** • Hemp Collective Byron: Aiming for Zero Waste
- 51 Chapter 9** • Livestock Management
- 54 Local Story** • Byron Grass Fed: Farming with Sunshine
- 57 Chapter 10** • Preparing for Natural Disasters
- 60 Local Story** • Tyagarah Apiaries: Beekeeping in Good Times and Bad
- 63 Chapter 11** • Farmer Health and Safety
- 67 Chapter 12** • Labour on Farms
- 68 Local Story** • Hayter's Hill Farm: Pioneering Farming Family with a Passion for Regeneration
- 69** References and Resources
- 70** Appendix: History of European Agriculture in the Byron Region



Our Cultural Heritage

Traditional Owners and Custodians of the Land

Byron Shire Council recognises the traditional owners of this land the Bundjalung of Byron Bay, the Arakwal People, the Widjabal People, the Midjungbal People and the wider Bundjalung Nation.

Council recognises that the most enduring and relevant legacy that Indigenous people offer is their understanding of the significance of land and the local and deep commitment to place.

This guidebook respects and embraces this approach by engaging with the community and acknowledging that our resources are precious and must be looked after for future generations.

The Indigenous Land Use Agreements and other negotiated agreements provide for the protection and management of Aboriginal cultural and heritage areas by the Bundjalung Arakwal people, eg. Arakwal National Park.

The Memorandum of Understanding ensures that Council will work in partnership with the Bundjalung of Byron Bay Arakwal People to ensure preservation of cultural practices, traditional sites, significant places and expressions of cultural identity. The Traditional Owners conduct cultural, eco-tourism and educational programs, providing an important cross-cultural exchange between Aboriginal people and non-Aboriginal people.

We encourage visitors to the region to visit the Bundjalung of Byron Bay (Arakwal) website: www.arakwal.com.au

Respecting Our Cultural Heritage

The earliest evidence of Aboriginal ancestors in our area stretches back at least 60,000 years. Aboriginal places and objects are integral to the rich heritage of the Byron Shire; providing links to culture, environment and knowledge.

Protection and preservation of cultural and environmental heritage is very important to the Bundjalung Arakwal people and to the Bundjalung Nation. In its role as land manager, Byron Shire Council is committed to working with Aboriginal custodians to protect places of cultural and environmental significance.

We believe all Australians have a moral obligation to preserve our Indigenous heritage. Aboriginal sites and objects on private land are protected under three acts:

- *National Parks and Wildlife Act 1974 (NSW)*
- *Aboriginal Land Rights Act 1983 (NSW)*
- *Native Title Act 1993.*

An Ancient Natural Landscape

The Byron region is set in a dramatic backdrop formed by the Mt Warning Caldera. The Shire is around 56,650 hectares in area and the landscape consists of lush mountain ranges rising steeply to 800m above sea level, sheltered valleys, coastal dunes and rocky headlands. These landscape features and associated soil types, combined with a warm subtropical climate offer desirable conditions conducive for sustainable rural production and agritourism activities.

Pre-European Farming

Our People, the Byron Bay Arakwal, have lived around the Byron Bay area for thousands of years. Before the many changes brought by European settlers, we used to live off the land and the water. It provided us with many foods from plants, bushes and trees. We want our children, grand-children and their grandchildren to know how we once lived and to also be able to use the food from these lands. We want them to know our special places. – Linda Vidler, Lorna Kelly, Dulcie Nicholls, Byron Bay Arakwal Elders¹

The Bundjalung people lived in harmony with the land. They have a deep respect and connection to Country along with well established experience and knowledge of their Country.

Before the clearing and claiming of the land for farming, following European settlement, the land, seas and waterways have been supporting the Bundjalung people for over 10,000 years. The area of Byron Shire was part of the vast Bundjalung Country that was thickly forested with large freshwater lakes and swamps near the coast, and included successive mountain ranges in the west, across to the sea coast. The land provided a well balanced diet of fruits, vegetables, nuts, grains, meats, fish, shellfish and oils.

Depending on the environment, where a family lived and the changes in seasons, the types of foods available would differ. The Bundjalung people had and continue to have a complex understanding of

the changing seasons and the environment. Their knowledge of seasonal changes in the environment and the ecology of plants and animals was and is very important in the search for food. Many complex ways of collecting and preparing food were developed over thousands of years.²

Making objects from specific timbers and plant fibres was an important activity. Items needed for hunting as well as for carrying and collecting food were made along with ritual objects for use in religious ceremonies. Timber and resins from certain shrubs and trees were used for making a wide range of tools and utensils.

Many plants provided medicines. Again, the local Bundjalung people had a complex understanding of the vast suite of vegetation and its properties from across the landscape³.

The Bundjalung people still have a deep respect, knowledge and connection to Country but the landscape and access has changed due to settlement, land clearing and European style farming.

¹ www.arakwal.com.au

² www.indigenoustralia.info

³ Australian National Botanic Gardens Education Services, 2000

Electronic copies of this document are available on Council's website www.byron.nsw.gov.au

Acknowledgement of Country

Council acknowledges and pays respect to the Bundjalung of Byron Bay, the Arakwal People as the Traditional Custodians of the land within Byron Shire, that form part of the wider Aboriginal Nation known as Bundjalung.

Council also acknowledges and respects the Widjabel and Mindjungbul people as Traditional Custodians within Byron Shire.

Council acknowledges the Aboriginal and Torres Strait Islander people who now reside within the area.

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Disclaimer

This publication is based upon information and data sourced from various government departments, websites, articles, journals and books listed under references. The authors cannot accept any responsibility and disclaims any liability, errors, omissions, or misstatements contained in this publication, which have resulted from placing reasonable reliance on such information.

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Introduction

Welcome to the Byron Region!

Jingi Walla! So you're looking to reside in your own piece of rural paradise in the Byron Shire – congratulations and welcome to our beautiful region... you have made an excellent choice!

If you are like a lot of the tree-changers who move here, the move may also bring a career change along with it and a rethinking of values. This guidebook is written for you... We aim to provide an overview of some of the key areas in rural land management for small farms and more importantly, who to contact for assistance and advice at various stages of your new journey.

Most of the content has been compiled from a wide range of land management resources produced by key agencies in the region. In particular, we acknowledge NSW Local Land Services, Brunswick Valley Landcare, NSW state government agencies and other local councils in the regions and we are indebted to these agencies and local industry associations for their assistance in allowing us to reproduce some of their content.

If you're keen to work and live in the region from your own or leased land, we have endeavoured to help you get started by providing an overview of:

- the history of agriculture in the region
- how your farming practices may impact biodiversity and the environment
- some of the things to consider before you buy
- ideas on making a living from small farm enterprises
- how to manage our natural resources; namely water, native plants, animals, and also how to manage pests, weeds, erosion etc.

- how important farm biosecurity is to our region
- safe chemical use on farms
- managing waste on farms
- livestock management
- preparing for natural disasters
- farmer health and safety
- some ideas on finding labour for farm enterprises.

We also encourage people along the way to learn by the experience of others who have kindly shared their own experiences and advice through our "local stories". These are real stories by people in the region who have learnt by doing. In all cases we have attempted to provide tips – some dos and don'ts – advice from people who have walked the path before us, for those who are starting out. We by no means say this is the only way to do things, but rather provide real case studies we can all learn from.

Lastly, and most importantly, we have endeavoured to help connect you to some of the key associations, resources and networks in our region that are there to help you. One of the outstanding benefits of living in our region is not just its natural beauty and connection to an abundance of nature, but its connection to people through established and informal networks who generously share their experiences and time to help others grow and thrive in our region.

Welcome to the Byron region! We are pleased you have taken the time to learn more about rural land management.



Chapter 1

History of European Agriculture in the Byron Region

From the 'Big Scrub' to dairy farming to modern day macadamia farming, we have seen many waves of trends in agriculture over the years and it makes for interesting reading.*



Byron Bay Historical Society

Australian Macadamia Society

Agriculture in the Byron region has gone through many waves of trends in land use over the years.

23 Million years ago

- Eruption of an ancient volcano, Wollumbin protruded from the landscape and the rich volcanic soil eventually led to the creation of the "Big Scrub".

60,000 years ago

- Before the European's colonised Australia in 1788, many people lived in this rich and beautiful place, traditionally known as Bundjalung Country, as their ancestors had done for more than 60,000 years.

1840

- Clearing of The Big Scrub begins.

1860's – 1880's

- The Big Scrub is cleared and farming of maize, sugarcane, corn and cattle begins to develop.
- Sugar mills erected.

1887

- Sugar growing on elevated Big Scrub land not a success.
- Dairying begins and becomes main industry.

1888

- A jetty is constructed in Byron Bay for the transportation of agricultural commodities and timber.

Early 1890's

- Bananas, mangoes and pineapples introduced to the area.
- The Bangalow Agricultural Society founded.

1894

- Train line between Lismore and Mullumbimby opened on 14th May and later to Murwillumbah on 24th December.

1895

- The North Coast Fresh Food and Cold Storage Co-operative Company Ltd (NORCO) began operations at Byron Bay

1896

- NORCO bacon curing operations began at Byron Bay.
- Coffee, custard apples, paw paws introduced.
- 28th August Byron Bay was officially declared a town.

1912

- The Binna Burra butter factory was erected. It became the focus of the economy of the Binna Burra, Bangalow and Newrybar area.

1913

- The Byron Bay Co-op. Canning and Freezing Co. Ltd opened its meatworks.

1920's

- The rapid growth of the banana industry was curtailed by 'bunchy top' disease which was rife by the mid-1920s.
- The Byron Bay Co-op. Canning and Freezing Co. Ltd closed its Byron Bay meatworks.

1925

- The North Coast Co-operative Company officially changes its name to NORCO Co-operative Ltd.

1928

- Construction of a new jetty in Byron Bay is completed. A large fishing industry begins.
- Byron Bay Co-op goes into voluntary liquidation and sells its meatworks to NORCO.

1930's

- Development begins on road network infrastructure to support the transport of produce.
- Bunchy top was eventually defeated and the banana industry experienced a revival.
- The Banana Growers' Co-operative Company (NSW) was formed to assist with the marketing of bananas.
- Dairy production reached a peak in the early 1930s.

1934: The Decline of Dairying

- North Coast dairy production declined progressively after 1934.

1945

- Bananas became a leading generator of economic prosperity in Byron Shire, compensating for the decline of dairying.

1947

- NORCO closes the Binna Burra butter factory.

1950's

- In the early 1950s the Brunswick valley briefly became the greatest banana producing district in the country.
- Steam shipping from Byron to Sydney stops.

1954

- Cyclone destroys the new jetty and wipes out the fishing industry.
- Whaling industry begins in Byron Bay.

1962

- Whaling ceases in Byron Bay.

1965

- USA markets for boneless beef necessitates the complete rebuilding of the Byron Bay Meatworks.

1970: Continued Decline of Dairying

- 1 July 1970 the Dairy Industry Authority regulates the milk market of New South Wales.
- NORCO Ltd announced that its factories would not receive milk in cans after 30 June 1971.
- Some dairy farms were converted to beef production or horticulture; others were sold or subdivided to provide rural residential blocks.

1972

- NORCO closes its Byron Bay butter factory and transferred its headquarters to its Lismore factory.

1975

- Manufacture of NORCO's meat products is transferred to Casino.

1983

- Production in the Byron Bay Meatworks ceased on 28th October.

1985 – 1990

- Cattle farming was becoming less viable and other industries started to take off including macadamias, fruits and vegetables.
- Strong competition from large blocks and good growing conditions in Queensland saw the demise of the banana industry in the shire.
- By the late 1980s, dairying had become a relatively insignificant economic activity in Byron Shire.

Today

- There is growing pressure on rural land use as our agricultural land becomes more urbanised.
- Macadamia farms are the prevailing type of crop produced in the area.
- Recent trends in regenerative, organic and small scale farms are again beginning to change how farming operates in the area.
- New industries are emerging such as Australian native foods and hemp in the region.
- Small scale farms in the region look to value-adding and agritourism for profitability.
- Over the past two decades there has been strong pressure to subdivide prime agricultural lands. This, combined with rising local land values, is making it increasingly difficult for new rural producers to afford quality land for crop production.

***See the Appendix on page 70 for the extended history of agriculture in the Byron region.**

Local Story

Rainforest Foods

Value-Adding Australian Native Foods

Background

Rainforest Foods is a pioneer in the evolving Australian native food industry. The people behind the brand are Anthony Hotson and Julz Martens and family. Their passion for conservation and regeneration of the Australian rainforest is obvious and has resulted in the planting and harvesting of an extensive range of native food plants for over 25 years. They grow a wide range of Australian rainforest fruits and spices on their farm including macadamias, Davidson's plum and finger limes.

They use their produce to create and market an impressive range of quality value-add food products including jams, sauces, oils and macadamia nut products. They aim to produce the highest quality products using simple ingredients that showcase Australian native food plants to the world.

Because they are so dedicated and passionate about conservation and regeneration, they also make a point of giving back to rainforest projects via local not for profit Rainforest Rescue, to help fund the replanting of native rainforest and the conservation of critical Australian rainforest habitat.

"Having spent time in 1993 with Costa Rican botanists investigating the utility of some of their rainforest flora, we thought to look at our own backyard. The Big Scrub rainforest had been mostly cleared from our land during the 1800s, except for a small but healthy remnant, which we decided to restore and extend. One thing led to another and we planted out various species, including macadamias, Davidson's plum and native limes. Our expectations for the growth of the market for this produce proved to be optimistic to say the least, and so we then began to value-add and market our own produce. Now we have a very busy small business, employing between seven and twenty people, and a beautiful farm in the prime of its productivity."

Why Australian Native Foods?

The Hotson family planted their orchard back in 1995–1997. They believe the flavours and nutritional properties of most Australian native foods are powerful and they have (finally) forged a place in our collective cuisine over the past few years.

Their business principles and ethos are simple – "leave things better than we found them" and they base all their farm management and business



practices on these principles. They say that "with our increasingly extreme climate, it is all the more important to grow the right food in the right place, in the right way".

Commercialising Rainforest Plants

It is well known that the local indigenous people collected edible native plants from our rainforests for tens of thousands of years. Over this time they developed detailed knowledge of what to collect, when to collect and how to prepare these foods. Following colonisation we've seen widespread clearing of the local Big Scrub rainforest and this information either remains in the hands of a few or it has been lost.

Commercialising the production of edible rainforest plants can be tricky – how to replicate what happens naturally in native forests on your own farm is not always straight forward or obvious. Producers often have to trial different methods of collecting and processing seed and propagating plants over many years before they reach success. The propagation of rainforest plants from seed can be quite complex because of the huge variety of seed types each with their own idiosyncrasies but for the Hotson's this is all part of their passion for conservation and regeneration.

"It was always a conscious choice to put species which originally grew on our land back into the ground here. Their pre-adaptation, resilience and cross-benefits to the local ecosystem make these

species a wise choice (and similar species from up or down the east coast rainforest regions). That said, commercialising the production of 'new' species is much more difficult than established crops."

Value-Adding

Rainforest Food's value-add side of the business has priority, so each year they make sure they have enough product to fulfil orders for the upcoming year, using produce from their own farm and supplementing where necessary from other growers if they have a shortfall. They make a very popular range of value-add products in their factory in Byron Bay. "We are probably best known for the Davidson's plum jam and our macadamia nut spreads, with people getting quite bedazzled by their flavours. We have a well-established and unique brand, known for the quality and integrity of the ingredients and methods we use."

Local Farmers' Markets and Other Sales Channels

They have worked hard to establish their brand through many sales channels including: local farmers' markets; local retail outlets; wholesale to retail outlets (health food, gourmet food, tourist facilities, accommodation businesses, independent supermarkets, and hamper businesses); food service (chefs, restaurants, cafés, bars and distributors); and through online retail sales. In particular, local farmers' markets have been a big part of the Rainforest Foods story for many years. They are an integral part of their sales channels.

"The local farmers' markets provide multiple levels of benefit to us and to our customers and have been a great success over the past 15 years locally and across Australia. We really connect to our customers there, and that's a conversation, which helps us grow in all the best ways. "



Native finger limes, macadamias and Davidson's plum are some of the species grown on the farm.

They sell any production over and above their value-adding needs direct to manufacturers or processors in bulk, be that pallets of frozen fruit or trucks of macadamia nut (in shell), or at times customers harvest their own material from their orchard.

First-hand Insights

Anthony offers some simple and sound advice for people starting out: "Really know why you are doing it, start small and grow slowly. Industry bodies and associations, neighbours, fellow growers and relevant government departments are all good sources of knowledge, but practical experience is by far the best teacher."

www.rainforestfoods.com.au

Checklist Dos and Don'ts

- Do** start your value-add business small and grow slowly.
- Do** seek help and network – industry bodies and associations offer a great place to learn from others.
- Do** ask questions of fellow growers and relevant government departments – all provide good sources of information for your business.
- Don't** bite off more than you can chew – take time to grow your business slowly so there is not too much financial pressure on you.
- Don't** put all your eggs in one basket – consider multiple sales channels and review constantly.
- Don't** go it alone. Take time to be involved and seek advice from key industry associations and ask questions of other successful business entrepreneurs and food producers.

Where to Find More Information

Northern Rivers Food:

www.northernriversfood.org

The Australian Macadamia Society:

www.australianmacadamias.org/industry

Business Australia: www.businessnsw.com/regions/NSW-regions/northern-rivers

Big Scrub Rainforest: www.bigscrubrainforest.org

Useful Resources

Davidson Plum, New Industry Handbook-Native Food, Rural Industries Research and Development Corporation Canberra, Pub No.08/021, Hotson, A. (2000).

Australian Rainforest Seeds – A Guide to Collecting, Processing and Propagation, Mark Dunphy, Steve McAlpin, Paul Nelson and Michelle Chapman, CSIRO Publishing (2020).



Chapter 2

Byron Shire Rural Land Use

This region is well known for its innovative local food industry which starts with a diverse, sustainable agricultural sector.

Living in a Rural Community

We produce a lot of different foods in this region and they all start on a farm somewhere in the hinterland. This includes: poultry farming, pig farming, cattle grazing, dairy farming, and horticultural orchards such as macadamias, pecans, avocados, stone fruit, custard apples, bananas, hemp, Australian native foods as well as nurseries and other commercial horticultural pursuits. Farmers have a right to undertake farming activities in accordance with local planning provisions and regulations.

The reality of this is that most agricultural farms can expect to make some noise, sometimes you may hear, see and smell livestock or see chemicals being sprayed, some produce are processed on farms, and trucks are often involved coming and going at different times of the day. This is the reality of farm life and rural living and sometimes it is a bit of a surprise to people moving from more urban areas.

One of the best ways to build a harmonious relationship with your neighbours is to be the sort of neighbour that you'd like to live near. We encourage you to take an interest in food and agriculture produced in the region, talk to people in your community about what they do, what's involved and take proactive steps on your own property such as planting wind breaks and buffers to reduce noise, dust and visual impacts. Shop from your local farmers' markets and talk to the farmers about what's involved in producing the exceptionally good produce that our region is known for.

A useful free reference guide is the brochure "Farmers Farm and Cows Do Moo". It summarises some important aspects of rural life. The brochure is available from the Byron Shire Council.

Our Rural Economy

Agriculture and tourism are the two key industries that underpin our rural economy in the region. These industries understand that economic growth and the protection of our natural environment go hand in hand



An innovative local food industry starts with a diverse, sustainable agricultural sector.

by continuing to adopt more sustainable practices in the way they operate.

Agriculture with related value added products contribute substantially to our economy. Many of our agricultural activities depend on the Shire's fertile basalt soils, subtropical climate and rainfall.

All of our rural agriculture industries are subject to external influences such as climate change, drought, bushfire, currency exchange rates and global economic downturns.

Agricultural Land Use Trends

Agricultural land use has changed over the years but it still remains a priority for the region. Recent trends in agriculture for the region include:

- an increase in plantings of high value perennial crops eg. macadamias, pecans, ti-tree, citrus etc.
- a diverse range of subtropical fruit and vegetable production including avocados, low chill stone fruit, custard apples, bananas, guava, pineapples, ginger, vegetables, herbs and micro-herbs etc.
- amenity horticultural industries such as nursery, cut flowers and turf farms

Byron Shire Rural Land Use

- emerging niche industries such as coffee, hemp, Australian native foods (eg. finger limes, Davidson’s plums, myrtles etc), botanicals grown for distilleries and essential oil
- sustainable beekeeping on farms to support pollination
- heritage breeds of livestock and poultry on smaller farms.

With agricultural land use in the region, we have also seen a trend towards the following:

- overall substantial loss of agricultural land – over the past two decades there has been strong pressure to subdivide prime agricultural land. This, combined with rising local land values, is making it increasingly difficult for new rural producers to afford quality land for crop production
- a movement away from family-succession farms
- a growing emphasis on regenerative agriculture, the importance of biodiversity on farms and organic farming in grazing and horticulture
- diversification of small farms and innovative value adding at the farm gate
- a growth in agritourism ventures bringing visitors to the region to farms
- leasing or share farming as an alternative to buying land and/or equipment for those wanting to farm.

The Value of Agricultural Production in the Region

This region punches above its weight for local food production, which starts with a diverse agricultural sector that contributes significantly to the economy.

In 2017–18, the gross value of agricultural production in the Richmond-Tweed region was \$434 million, which was 3 per cent of the total gross value of

agricultural production in New South Wales (\$13 billion). The most important commodities in the region based on the gross value of agricultural production were cattle and calves (\$97 million), followed by macadamias (\$87 million) and sugarcane (\$58 million). These commodities together contributed 56 per cent of the total value of agricultural production in the region. In 2017–18 the Richmond-Tweed region accounted for 94 per cent of the total value of the state’s macadamia production.

Source: ABARES – www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-richmond-tweed#agricultural-sector

Number and Type of Farms

Australian Bureau of Statistics (ABS) data indicate that in 2017–18 there were 1,360 farms in the Richmond-Tweed region with an estimated value of agricultural operations of \$40,000 or more. The region contains 6 per cent of all farm businesses in New South Wales.

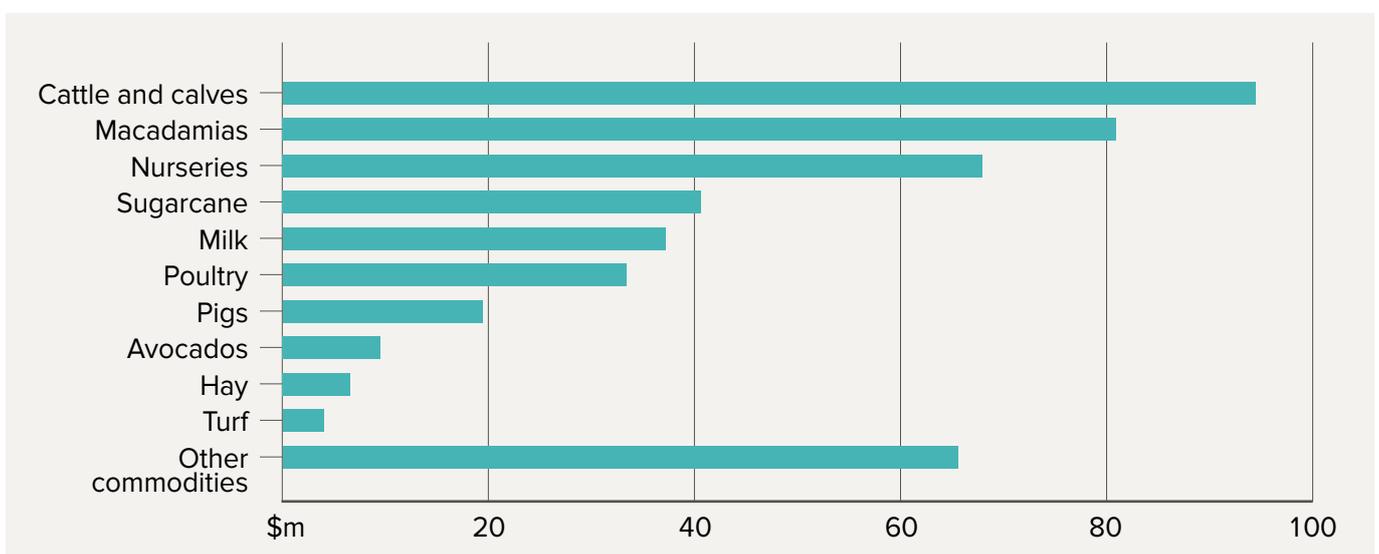
Climate Change

Climate risks identified for the region

Climate change will likely impact agricultural systems (affecting crops, evaporation of surface water, and stock), natural ecosystems, regional infrastructure and fire management.

The “North Coast climate change snapshot” produced by Adapt NSW offers predictions for future climate change for the region based on long-term observations of weather. This report suggests that the North Coast Region is projected to continue to warm in the near future (2020–2039) and far future (2060–2079). The warming is projected to be on average about 0.7°C in the near future, increasing to about

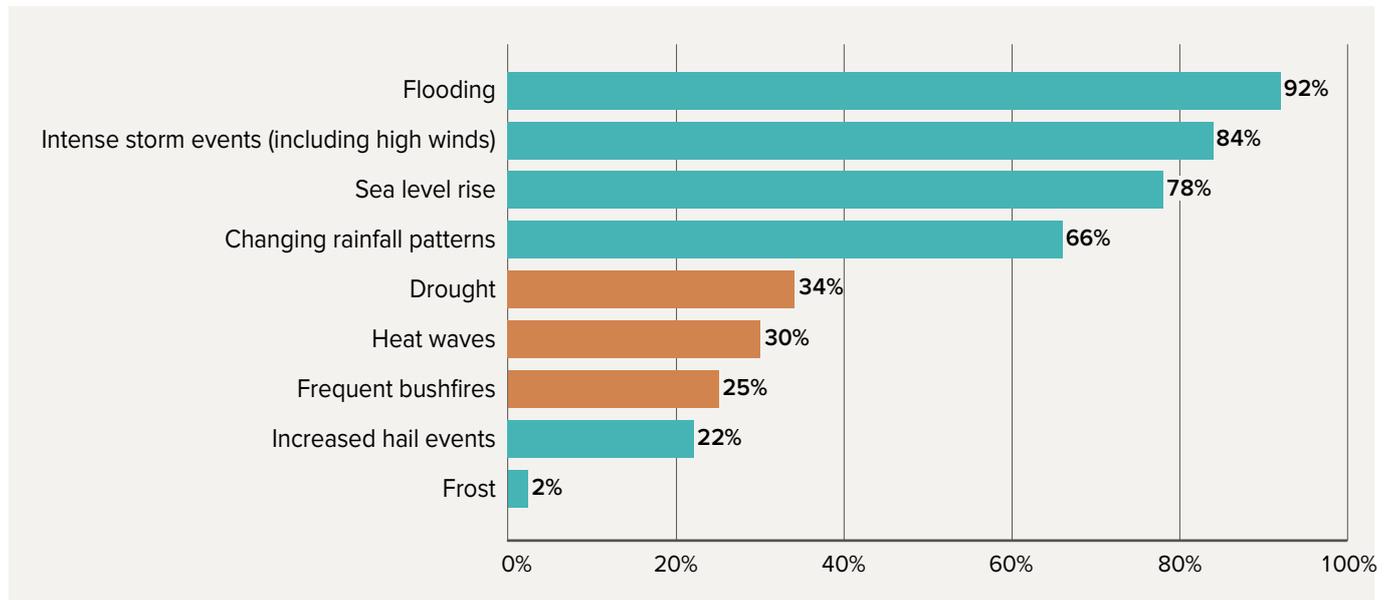
Value of Agricultural Production, Richmond-Tweed Region, New South Wales 2018-2019



Source: ABARES, *About my region – Richmond-Tweed New South Wales*: www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-richmond-tweed#agricultural-sector

Climate Risks Identified for the North Coast Region

A survey of regional decision makers was conducted to identify how the expected impacts of climate change may affect our local communities and to benchmark regional adaptation actions for the north coast region (2018 – 2019). The respondents identified a number of climate related risks facing this region.



Source: Adapt NSW, North Coast Enabling Regional Adaptation, North Coast region report, Office of Environment and Heritage, 2019 Download the full report here: www.climatechange.environment.nsw.gov.au/Adapting-to-climate-change/Regional-vulnerability-and-assessment/North-Coast

2°C in the far future. The number of high temperature days is projected to increase, while a reduction is anticipated in instances of potential frost risk.

The warming trend projected for the region is large compared to the natural variability in temperature and is of a similar order to the rate of warming projected for other regions of NSW.

The North Coast currently experiences considerable rainfall variability across seasons and from year-to-year.

Summary of the expected climate change for the region:



Temperature: the region is expected to experience an increase in all temperature variables (average, maximum and minimum), more hot days, and fewer cold nights for the near and far futures. Heatwaves are also projected to increase, be hotter and last longer.



Rainfall: seasonality of rainfall will change. Autumn and spring rainfall will increase in the near future and the far future. The majority of models agree that winter rainfall will decrease in the near future and the far future. Summer rainfall is projected to decrease in the near future; however, summer rainfall is projected to increase in the far future.



Fire: fire risk will increase during summer, autumn and winter, with projected increases in average and severe Forest Fire Danger Index values in the near future and the far future. Autumn is projected to have a slight decrease in fire weather.

Byron Shire Biodiversity

Byron Shire is at the centre of Australia's wet sub-tropics bioregion that covers south-east Queensland and north-east NSW. As a result, Byron Shire is renowned for the quality and diversity of its natural environment, including:

- overall fauna species diversity equal to the wet tropics bioregion of Northern Queensland and second only to the wet tropics for birds
- highest diversity of marsupials, frogs and snakes in Australia
- high number of relict species such as the red boppel nut and Fletcher's frog, which are direct descendants of species that lived in the rainforests of the ancient continent of Gondwana.

The vegetation on lands used for agriculture and the coastal plains has been cleared to a much greater extent than the steep ranges. As a result these areas are more vulnerable to invasive weeds, feral animals and impacts of climate change.



Photo © Brookfarm

Brookfarm believes rainforest regeneration is not only important for the environment, but also increases the yields of their farming practices.

Hinterland and Coastal Landscapes

Across Byron Shire, we have different types of geography eg. hinterland and coastal landscapes. These micro-regions have different micro-climates, for example in coastal regions the temperatures remain more moderate due to the cooling effects of the sea. However in the hinterland areas, temperatures can be up to 5 – 10 degrees hotter and cooler in summer and winter.

Byron Council have developed a Rural Land Use Strategy that provides a twenty year framework to guide future land zoning and use, protection and/ or development of our rural environment, economy, community and infrastructure.

Where to Find More Information

Byron Shire Council Biodiversity Conservation Strategy: www.byron.nsw.gov.au/Services/Environment/Biodiversity-Conservation-Strategy

Byron Council Rural Land Use Strategy: www.byron.nsw.gov.au/Services/Building-development/Plans-maps-and-guidelines/Rural-Land-Use-Strategy

Byron Shire Council Native Plant Guide: www.byron.nsw.gov.au/Services/Environment/Native-animals-and-plants/Native-Plant-Guides

NSW Government, Department of Planning Industry and Environment, Adapt NSW: www.climatechange.environment.nsw.gov.au

Australian Government, Department of Agriculture Water and the Environment: www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-richmond-tweed#agricultural-sector

Local Story

Sourdough Business Women

Background

Sourdough Business Pathways (Sourdough) is a not for profit initiative with a purpose to inspire a sustainable, purposeful, generous and diverse Northern Rivers NSW community.

Sourdough began ten years ago when a small group of dedicated, passionate and super talented volunteers committed to protect existing jobs in the Northern Rivers area and create new ones through their volunteer mentoring program. Founding members had the big vision of utilising the wealth of experience, skills and wisdom of business people and entrepreneurs that live and work in the area. This generosity of volunteer time, commitment, collaboration and support remains at the heart of the Sourdough program today.

“To have access to such clever business minds which are available through the Sourdough mentor program has been a business game changer for us. In six months we have doubled our revenue, created significant additional employment positions and solidified our business practices to ensure a best practice model.” Karina McKey, mentee.

Sourdough also offers entrepreneurial space at the Byron Community College with a dedicated innovation hub currently filled by nine local businesses, assisted with reduced rent and access to the mentoring program, workshops and networking opportunities.

Sourdough Business Women

The other major initiative is Sourdough Business Women (SBW), a unique business group run by women, for women. Amy Colli is Regional Liaison Manager and is working with the team to assist women in business to be more sustainable, overcome challenges, grow and develop.

Amy says, “about three years ago Sourdough recognised the importance of having a safe space where women can take the time to express themselves and have their own environment. Consequently they established the Sourdough Business Women initiative which offers women support in a slightly different way – specifically more time for expression and engagement through facilitated workshops, networking and mentorship.”



Sourdough help all businesses, including local producers, find the right advice at the right time.

What Can Sourdough Business Women Offer Local Food Producers Just Starting Out?

Amy Colli says that Sourdough can offer local food producers a number of benefits including:

- business support in terms of connections, introductions to either mentors or other businesses
- “comfort in community” – where you are able to connect with like-minded people and businesses.
- regular courses and workshops at subsidised (often free) rates, making access to business assistance widely available.

www.sbp.org.au

Checklist Dos and Don'ts

Do take the time to do your research when you are starting out. Don't just jump in.

Do work on getting your branding and messaging right – make sure your messaging on websites, social media etc. are in sync.

Do get your business systems in place with strong customer service.

Don't over promise... the old saying comes into play “under promise and over deliver”.

Don't go it alone... there are a lot of people out there to help. Attend workshops, drop in to network groups and see what is out there for support.

Don't launch into the market until you have your messaging sorted, your website up, your customer service responsive, and supply chain in place.



Chapter 3

Before You Buy

There are so many considerations before buying a rural property. We have compiled a checklist to help your research. If you need assistance, there are a number of resources available to help you on your journey.

Do Your Homework

It's stating the obvious, but when you're considering buying a rural property, it's always wise to do your homework first. If you have an interest in purchasing land for a particular agricultural use, it may be helpful to consult with some of the rural experts in the region to help answer some of your questions. Council is there to assist with questions regarding land use, development applications etc. NSW Local Land Services (LLS) are a state government organisation who also help landholders with information and may be able to assist. They have a number of resources including publications available for landholders. Of course, it is also advisable to get legal advice before buying any property.

Checklist: Before You Buy

The following checklist has been adapted from the LLS "Rural Living Handbook, A guide for rural landholders" to provide a starting point before you buy:

History of the property

- Do you know the history of the property? Request a property search from LLS to ensure there are no outstanding rates, levies, known chemical residues or animal health issues on the property.
- What stock and/or cropping did the previous owner have?
- Did they sow pastures and use fertilisers?
- Are there any rubbish dumps on the property that you will need to remediate?

Natural resource management on the property

- Are there pest animals (eg. rabbits, foxes) on the property?
- Is the activity you plan for the property suited to the landscape and capability of the land?
- Is there enough water to carry out the activity that you have in mind and is it of suitable quality for stock and plants?



Photo © Anne Briggs

- Are all required services provided to the property? If not, can they be provided economically? Or is it an area that will always have limited services? Services include phone, gas, water, sewer, internet and electricity.
- Do you know what the regulations and conditions are for building dams or that you may need approval for sinking bores? Do you know that digging near a watercourse may require a permit?
- Are you aware that in most instances you require approval to remove native vegetation? How might this affect your activities? Is there shade for animals?
- Are there good quality pastures? Are they dominated by native or introduced species?
- What weeds are on the property?
- Is there soil erosion on the property that will be time consuming and expensive to fix?
- Is the soil fertile and the pH appropriate for growing pasture, crops and any other produce that you want to grow? Are there any salinity issues?
- Are the fences in good repair, safe for animals and suitable for your needs?

Before You Buy

- If there is no existing dwelling, does the land have a building entitlement?
- Are there existing or proposed adjacent land uses that will affect your enjoyment of the property? For example, are there legitimate rural uses nearby such as agriculture, quarries, mines and forestry that produce dust, odours or noise?
- Are you aware of your responsibilities surrounding the management of native vegetation, in particular the removal of trees or new cultivations?
- Are any threatened species of flora and fauna on the property?
- Will the amount of time and money required to control weeds, erosion and pest animals be excessive?

NSW Local Land Service Rate Levies

When looking to purchase a rural property there will be local council rates to consider. Some owners of rural holdings must also pay a Local Land Services (LLS) rate levy for their property.

These LLS rates are charged on a two-tier basis, involving a general rate paid by all landholders and a supplementary animal health rate. Each region has a minimum rating area for properties.

These rates are important because they go towards LLS work in biosecurity of our environment and agriculture i.e. to protect against pests, weeds and diseases.

Council's Role in Developing Your Rural Property

Councils are responsible for determining land use zones, in consultation with government agencies and their communities.

When you purchase your rural block, you should also check with Council about the potential land uses of your block and those surrounding it, for example:

- Are there any development applications current for the nearby area?
- Have other developments been approved but not commenced?
- Are there any restrictions on obtaining approval to build a house or other buildings on your block, or to develop certain desired land uses?
- Does the property have any constructions or developments that were completed without approval?
- Are there any Property Vegetation Plan agreements, or other forms of covenants and easements that apply to the land?
- Are there threatened species on or near the property?

Building on Your Rural Property

Council assess building and development proposals against development regulations, including the Local Plans, the Building Code of Australia, including the *Environmental Protection and Assessment Act (1979)*, and Development Control Plans.



Photo © A Ratcliffe

Before you buy check what weeds are on the property.



Photo © John Tannis nursery

Brunswick Valley Landcare are mapping and protecting this species as a Saving Our Species (SOS) project.



Before purchasing a rural property, check what rates apply.

If you are preparing a development application it is recommended that you contact Council as early as possible to ensure that documentation meets Council's standards and for any other help.

Do I need a development application?

If your proposal is not a complying development or prohibited development, you are legally bound to submit a development application to Council for any building, demolition and subdivision works and for any development requiring consent under the Local Environmental Plans.

Development applications are required so Council can assess your plans and information, inspect your property and determine whether your proposal is appropriate and does not have an adverse impact on the environment.

Remember – if you are in doubt, please ask Byron Council as time spent early may avoid delays later.

Exempt and complying development

Some development types may be nominated as exempt or complying development by the State Government and do not require the submission of a development application and development consent. Check with Byron Council for details of these.

Where to Find More Information

Byron Shire Council – Rural Land Use Strategy:

www.byron.nsw.gov.au/Services/Building-development/Plans-maps-and-guidelines/Rural-Land-Use-Strategy

Byron Shire Council – LEP, DCP, Zoning etc.

Maps: www.byron.nsw.gov.au/Services/Building-development/Plans-maps-and-guidelines/Byron-LEP-2014-and-1988/Zoning-maps

Byron Shire Council – Development Support

Officer: www.byron.nsw.gov.au/Services/Building-development/Do-I-need-approval/Development-advice-services

Earthscapes Consulting Pty Ltd:

www.earthscapes.com.au

Google Earth – Free imagery can also be

obtained through Google Earth at:

www.earth.google.com

NSW Local Land Service (LLS) –

Rural living handbook, A Guide for rural landholders, LLS, 2020: www.lls.nsw.gov.au/___data/assets/pdf_file/0007/1147804/Rural-Living-Handbook-2020.pdf

Local Story

Frida's Field

Diversifying Income Streams on Small Farms

The Rawlings are a hard working family living on a picture-perfect farm in Nashua and working towards their dream – to one day produce wholesome delicious food, shared with others, while farming sustainably to sequester carbon, build soil health and foster biodiversity.

Background

Frida's Field is a farm owned by Jeanie and Edward Rawling and family since 2015. The property is in the Byron Hinterland hamlet of Nashua and offers 120 acres of fertile river flats, bordered by the Byron Creek and Wilson River. It was one of the original dairy farms in the area, but the Rawlings now breed Angus-Wagyu beef cattle using cell grazing to manage the land sustainably and run a small farm guesthouse. They have plans to continue diversifying with an on-farm restaurant and farm made value-add products in the pipeline.

Who is Frida you may well ask? Jeanie explains, "When we first moved to the country we bought a big ginger pig and called her Frida. We'd never bred pigs before but we knew we wanted to give it a go. Our plan was to live close to nature, grow our own food, spend our time doing the things we truly love, and to share this with others. Frida was our first step towards following our dream – a dream which keeps on growing!"

Their Journey

Rural life and producing food has been a natural extension for them both. Inspired by the growing attention on food provenance, artisanship and ethics that they experienced while exploring Europe, the couple confirmed their desire to live on the land and be involved in sustainable food production. It took falling pregnant with their first child to transform their desire to live on a farm into a reality. They chose to move to Nashua in the Byron Hinterland.

Regenerative Agriculture Practices

The Rawlings use farming practices that actively reverse environmental degradation while producing food that is more natural, flavourful and nutritious.

"We are building a syntropic agroforestry system on our farm – a technique which interplants a diversity of food crops to 'nurse' forest trees into maturity. An abundance of delicious, all-natural food is the by-product of the re-forestation process."

They run a small herd of Angus-Wagyu cattle which they breed and manage with holistic principles. "Our 120 acres is divided into 16 smaller paddocks that we rotate the cattle through every few days. This improves the organic matter in our soils which actively removes carbon from the atmosphere.

The process of decomposition releases nutrients which strengthens the pasture and builds humus which stores plant nutrients, holds moisture and improves soil structure, thereby acting as a carbon sink. Over time they plan to implement a 'silvopasture' system – planting trees into their pastures. They understand this will have a huge range of benefits including improvements in carbon sequestration, water retention, biodiversity, soil health and animal welfare.

Diversifying Income Streams

Their overall business model is about diversification of income streams; not putting all their eggs in one basket. The guesthouse and cattle have been their first forays into commercial enterprises on the farm and they have big plans to continue to diversify with several other small-scale businesses.

They have successfully undergone the Byron Council's development application and construction processes to complete the building of a restaurant on their farm. They are building up their veggie gardens so they can deliver a true paddock-to-plate experience now that their restaurant is open for business.

Managing Water Access

In establishing the farm, getting on top of water access has been one of the priorities, to enable them to diversify with crops down the track. When they bought the farm it came with a stock and domestic water licence – pumping out of the Wilson River. Their experience showed it was not a straightforward process to find a water licence. "We found it difficult to understand the water access marketplace and used word-of-mouth to locate another farmer further up the river who wanted to sell their water rights."

To help ensure on-farm water security they have also invested in three very large tanks to collect water from their roofs and will continue to invest in more water harvesting facilities as they can. "The recent drought demonstrated how river water rights are not necessarily stable if the rivers get low due to lack of rain."



The Rawlings business model at Frida's Field is all about diversification of income streams.

First-hand Insights

The Rawlings offer some simple advice for people starting out: Most importantly they found it essential to seek guidance from neighbours who have lived in the area for a long time. "Listen and learn before having too strong an idea about what kind of business you should set up. In particular, community Facebook groups are very popular in the Northern Rivers and a great source of information".

The Rawlings recommend you seek information and resources on offer from key agribusiness organisations in the region eg. they found Regionality, Young Farmers Connect and NSW Local Land Service very helpful in the planning phase.

Their experience shows that it's important to have off-farm income to support the farm development. They advise that you be kind to yourself and don't put too much financial pressure on yourself – take your time and ease into life on the land.

www.fridasfield.com

Checklist Dos and Don'ts

Do seek guidance from your neighbours, especially those who have lived in the area for a long time.

Do seek help from local organisations that offer assistance to people starting out in agribusiness eg. NSW Local Land Services, Young Farmers Connect and Regionality.

Do check with Byron Shire Council and NSW State Government at the pre-planning stage to see if your dreams are possible on your land and what official approvals you may need along the way.

Don't expect it to all happen overnight – creating your dream and diversifying farm income streams can take a long time to establish.

Don't give up your day job – you will no doubt need off-farm income while establishing your dream farm!

Don't let rocky situations stop you from fulfilling your dreams. No doubt there will be hurdles but you will overcome these, learn and grow.

Where to Find More Information

Brunswick Valley Landcare:

www.brunswickvalleylandcare.org.au

Farming Into the Future:

www.farmingintothefuture.org.au

Regionality: www.regionality.com.au

Young Farmers Connect:

www.facebook.com/YoungFarmersConnect

North Coast NSW Local Land Service:

www.lls.nsw.gov.au/regions/north-coast

WaterNSW: www.waternsw.com.au



Chapter 4

Making a Living on Small Farms

This region has a solid reputation for food, beverage and health care products which are typically created on small sustainable farms. Researching what's currently produced, where there are gaps in the market, networking and learning from others is a good place to start.

What to Produce?

The top questions we hear from people moving here on a tree change are “how can I make money from the land” and “what will grow here”?

Our Shire's fertile basalt soils and subtropical climate support a rich and diverse farming community. Consulting a local agronomist or regenerative agriculture consultant in the region may be a good place to start to determine what is suitable for you to grow / produce on your land and what will be involved.

Value Adding for Small Farms

The Shire is known for its local produce and innovative food producers. In 2016, the Byron Shire was awarded the 'Most Outstanding Food Region' by *Delicious* magazine. Many of our local producers have won their own business, food and sustainability awards.

Our local producers create a variety of food, beverage and health care products on small farms from locally grown produce eg. a range of dairy products, spirits, oils, cured meats, small goods, muesli, sauces, jams, relishes, artisan breads, confectionery, shampoos and other health care products.

Researching what's currently being produced in the region, what value-add products are successful and where the gaps are in the market is an important part of the journey.

Consider gaps in the supply chain that need to be filled. For example, there are a number of food and beverage businesses that are seeking specific food ingredients to add to their value chain eg. botanicals for our local beverage producers, a range of Australian native food for distributors and exporters, coffee beans for our coffee producers and roasters.

A good place to start is to talk to local producers. They have their ear to the ground and can offer some practical advice. A great local network is Northern Rivers Food which aims to connect people in the local food and beverage industries and Sourdough

Business Pathways that offer mentoring support and regular events.

Regardless of what you decide, it is always advisable to cast the net widely and seek advice from locals before you dive into new ventures.

Niche and Emerging Markets

One of the trends in our region is to have smaller, diversified farms. Some ideas for smaller rural blocks that look at emerging and niche value add markets may include:

- Australian native food eg. finger limes, myrtles, Davidson's plums, etc.
- raising free range chickens or ducks for eggs or breeding rare heritage or fancy poultry for sale
- raising goats or pigs and producing value add products eg. salamis and small goods
- growing heirloom vegetables, herbs and seedlings for local markets, restaurants, cafés or cooking schools
- growing a mixed orchard with a variety of fruit, nuts and vegetables and developing a range of value add products such as dried products, chutneys, vinegars, jams, oils and healthcare and beauty products
- growing a range of botanicals and essential oil plants for value add products eg. for local spirits, oils soaps, beauty and health care products, cosmetic, perfumery or therapeutic applications
- grow a range of seedlings and plants to sell at local markets
- beekeeping for honey and pollination of local fruit and nut orchards
- grow trees or shrubs around or among crops or pastureland (agroforestry)
- grow plantation timbers for commercial purposes

Agritourism Opportunities

The Byron Shire is a tourist hotspot and people visit the region not only for its world class beaches, but also for authentic food and farm experiences.



Cape Byron Distillery tour.

There are many opportunities to provide authentic food-farm experiences. Before you embark on any of these, check with council to determine what is possible on your property.

Authentic Food-Farm Experiences

Many people visiting the Byron region are keen to try locally grown food, discover how things are grown, visit real farm animals, meet the food producers and learn new cooking skills. Of course, providing an authentic experience is important and it depends on your own skill levels and offerings, but the following offer some food for thought for food-farm experiences:

Food tours – meet the producer, taste the products

There are a number of existing tourism businesses in the region, that may be interested in seeking local producers interested in being involved in their authentic farm tours. Some local businesses offer food or meal pods for visitors which you may be able to tap into eg. offering particular niche food products that represent the region.

Cooking classes using locally produced food

People with food / chef backgrounds may be in a position to offer on-farm cooking classes for people where they pick the food then prepare a meal together and learn new skills.

Offering other “How To” classes

If you have specific skills this may be an option. There is a never ending list of home / rural based skills that city folk may be interested in learning whilst visiting the region eg. home grown fruit and vegetable gardening, native bees, make your own bread, graft a tree, make a tree house etc.



Byron Bay Cooking School.

Selling By-products of Farming

On your farm, perhaps there will be by-products that may be able to be used as ingredients for another product? It is another way to make extra income in addition to your core product or offerings and help decrease waste and landfill. For example, a local gin manufacturer in the region offers their juniper berries to a local pig producer for a special ‘gin pig’. Coffee roasters may offer castings for local gardeners to improve soil structure. Considering the whole supply chain, networking and talking to other producers may throw up some interesting possibilities!

Agistment

There is a range of different agistment services offered. Some may be temporary eg. properties with livestock impacted by drought may just seek a greener drought-free pasture with access to clean water during tough times. Others may seek agistment services more permanently.

Insurance, water costs, fencing requirements, shelter and other infrastructure maintenance are things to cost out when planning how much to charge for agistment services. A formal legal agreement between both parties is also recommended to avoid potential conflict down the road.

Farmers’ Markets

Our region is a long way from the big markets of Brisbane and Sydney, so if you plan to sell products commercially, you need to consider where you will be selling your product.

The closest larger metropolitan centres are the Gold Coast and Brisbane and there are lots of opportunities to either sell directly or through distributors. Byron Bay is a hub for many different talented producers, and in



Farmers Market.

the broader Northern Rivers region, there is a market offered nearly every day of the week.

Our region is famous for its excellent markets and there are still many opportunities for the right products. It is worth noting that each of the different markets have their own philosophy, point of difference, rules and regulations. If you're interested in selling at farmers' markets, chat to organisers of each market to determine what gaps there are for entry and if your products would meet their guidelines. It's also good to talk to existing farmers' market sellers to determine the right fit for your products. Some markets prefer to showcase just one producer from each category eg. only one pork producer, citrus, dairy etc.

One of the great benefits of selling via farmers' markets is that you sell at a retail price vs. wholesale price. A lot of local producers who sell at the markets also say they get great feedback on their product and use it as a bit of market research to gauge their customer's attitudes. Don't forget about your own public liability insurance needs and you will also need to be a morning person with early starts!

Roadside Stalls

As you drive around the region, you will notice quite a few roadside stalls, selling a variety of different locally grown produce. These usually operate privately from farms or sometimes from community halls as fundraisers. They operate on an honesty box system and they offer an easy way for small farm landholders to sell excess products to consumers directly without a big outlay of money or effort.

However in NSW bear in mind that you may need an approval with licence issued to sell in this way.

Farming Infrastructure Considerations

You may reach a point with your small rural farm to expand its operations and include more value-adding operations on site. This may be in the form of commercial kitchens, restaurant or distillery etc. Each case needs to be considered by Council and we recommend consulting Council at the planning stage.

Where to Find More Information

Business Support and Networking

Northern Rivers Food: www.northernriversfood.org

Sourdough Business Pathways: www.sbp.org.au

Byron Bay Chamber of Business:
www.byronbaychamber.com

Business NSW: www.businessaustralia.com

Industry Associations

Australian Macadamia Society:
www.australianmacadamias.org/industry

Australian Sub-tropical Coffee Association:
www.astca.org

Australian Pecan Association:
www.pecangrowers.org.au

Northern Rivers Amateur Bee Keepers Association:
www.beekeepers.asn.au/northern-rivers

Government Agencies

ABLIS: www.ablis.business.gov.au/service/nsw/approval-to-sell-goods-or-services-from-a-temporary-store/11181

NSW Department of Primary Industries:
www.dpi.nsw.gov.au/about-us/science-and-research/centres/wollongbar

NSW North Coast Local Land Service:
www.lls.nsw.gov.au/regions/north-coast

RDA Northern Rivers:
www.rdanorthernrivers.org.au

Byron Shire Local Markets:
www.byron-bay.com/byronbay/market.html

Byron Shire Council – Byron Region Food handbook: www.byron.nsw.gov.au/Business/Business-in-Byron/Food-production

Other

LdS Silviculture (LdSS): www.ldsilviculture.com

Local Story

The Value of Local Networks

Pam Brook, Northern Rivers Food



Pam and Martin Brook.

Pam Brook is co-founder of Brookfarm which she established with her husband Martin back in 1999. She has always been at the forefront of the local food industry scene, leading not only her own businesses, but also supporting and mentoring many other local producers in the region. With a passion for the growth and development of a sustainable regional food industry she helped set up Northern Rivers Food network and was the Chair for over a decade. She reflects here on her own journey and the value of our local food networks

Background

Brookfarm is Australia's leading producer of gourmet macadamia products. From humble beginnings at the Bangalow Markets, Brookfarm now employs over 75 staff producing premium muesli, granolas, nut mixes, muesli bars and macadamia oils for the Australian domestic and International markets exporting to over 17 countries including China, Japan, UAE, USA and Europe.

Establishing Northern Rivers Food Network

In the early days of Brookfarm, Pam was helped a lot by others in the local food industry. She developed local networks with like-minded food producers and



Brookfarm Macadamia Oils.

went along to local business network meetings to connect with others in the same boat.

“We have always been helped along the way by other people – there is such value in reaching out to other food producers and collaborating. Early on I received tremendous support from being part of a women in mentoring networking group.”

Northern Rivers Food (NRF) started out in 2012 as a project of the Regional Development Australian (Northern Rivers) funded by NSW government grants. Pam was on the board at the time and was part of its development, starting out as Chair of the group.

NRF grew over the next few years, building up the membership, running events and bringing the local food industry together and then unfortunately lost its government funding after two years.

“It was devastating to lose this funding, however we felt it was an opportunity to rebuild the model of NRF to be not just about ticking government boxes, but to be an independent group owned and run by the local food industry to deliver what the industry needed from paddock to plate.”

During this time Pam was CEO of Brookfarm and the business, along with other local industry stalwarts such



Northern Rivers Food industry event.

as Stone and Wood, Salumi Australia, Mount Warning Spring Water, Bangalow Sweet Pork and Byron Bay Chocolates, all supported NRF by contributing money to the network as “foundation members”. In this way, they were able to raise enough money to employ an Executive Officer.

Since then it has been an independent not for profit member based food group, to support the food industry in the Northern Rivers. It continues today with the same aims; to connect people in the local food industry by providing regular events, workshops and networking opportunities.

“NRF has gone from strength to strength over the years. At its heart it is all about collaboration and connection. For example this week I might have reached out to 20+ producers in a search for ingredients for a new product we are developing. By reaching out to people directly within the NRF network you get the real info from their experience and incidental things come up which is a good direction to go. All of a sudden people are talking to each other and things start to happen.”

Other Local Networks

Apart from NRF, Pam suggests other local networks that offer local food producers support including:

- Sourdough Business Network
- Young Farmers Connect
- The Local Business Chambers
- Local grower associations eg. the Australian Macadamia Society
- Local Regenerative Farming groups

The Future for Food in this Region

Pam believes this region has huge potential for local food producers and the future is very optimistic. She believes there is a huge opportunity for the region to show leadership in regenerative farming producing quality food.

“We have an opportunity to showcase how to do food production well. We need to focus on people connecting with each other. We do that really well in this region. Our food industry has a huge heart and soul and we have a great future ahead of us in this region.”

First-hand Insights

Pam says there is nothing she would change in their own journey since moving to the region some twenty years ago and offers some sound advice for people starting out in food production in the region:

- talk to people and build networks
- do what you're good at. If you're not good at something, employ someone in who is good at it or get a business partner who's good at that. You don't have to do everything yourself
- take the ego out of it – it is always important to listen to the advice of others openly and seek and take constructive advice
- always try to put a bit away for a rainy day... you never know what's around the corner... forward planning is really important
- get good people around you - employ people with the right cultural fit. Attitude is the most important thing – you want people to really connect with the business
- when things go pear shaped, and they will... look for the opportunities, no matter how far left of field they are
- when things are going really well, remember to share the love with those who work with you.

www.brookfarm.com.au

Where to Find More Information

Northern Rivers Food: www.northernriversfood.org

Sourdough Business Pathways: www.sbp.org.au

Young Farmers Connect:
www.futurefeeders.org/nryfa.html

Australian Macadamia Society:
www.australianmacadamias.org/industry

Brunswick Valley Landcare: www.landcare.nsw.gov.au/groups/brunswick-valley-landcare-inc

NSW Business Chamber:
www.nswbusinesschamber.com.au



Chapter 5

Looking After the Land

Moving to a rural block usually involves a steep learning curve. For some it will be the first time they have had to consider managing natural resources, think about water use, managing weeds, planting native vegetation and managing pests. It's all part of the journey!

Managing Natural Resources

As a landholder in this region, it is important to be mindful that you are the caretaker of the land. If you manage it carefully, it will reward you in spades. In this section, we outline some of the main considerations in starting the journey to look after your land.

Note we have only lightly touched on each of these areas. There is a lot of available information on each of these topics and we recommend you contact local government agencies for more information. In this section, we have adapted information from the "Rural living handbook, A guide for rural landholders" produced by NSW Local Land Services.

Farming Terms: What's In a Name?

Over the years we have seen many new terms to describe sustainable farming practice eg. holistic farming, ecological agriculture, natural farming, humus / carbon farming and most recently we have seen the emergence of the term "regenerative agriculture". Some farmers would prefer to just use the word "farmer" to cover all of that, and would say they have been using best practice sustainable farming methods for years... it's nothing new.

In practice, any method or system of farming that recognises a duty of care to the environment and tries to work in harmony with the natural ecology as much as possible is to be encouraged. Overall there is not right or wrong way to understand natural processes; it is about using farming systems that focus on the outcome of supporting the natural ecology that are the goal. No doubt there are many different views, approaches and terminology used in farming today and it can be confusing if you're starting out on your farming journey.

This guidebook offers some basic introductory information for those new to farming, and encourages sustainable farming based on observation, sound ecological principles and land management practices to build soil and ecosystem health i.e. to build or regenerate land systems.

To be honest we don't mind what you call it, but if you are starting out in farming it may be helpful to consult with some of the agriculture experts in the region to help answer some of your questions.

Regenerative Agriculture

Regenerative Agriculture is a term to describe a range of sustainable farming practices that focus on generating systems, improving soils, increasing biodiversity, enhancing ecosystems, supporting bio-sequestration, increasing resilience to climate change and strengthening the health and vitality of farm soil.

In short, it is a method of farming that helps improve the resources it uses, rather than destroying or depleting them. Regenerative practices include strategically rotating pastures, recycling as much farm waste as possible and adding composted material. In short, by increasing the plant diversity of their fields or pastures, farmers help create nutrient-dense soils that lead to more productive yields.

Water and Irrigation

Managing water is a vital part of successfully managing your property. You want to use water efficiently to minimise costs and maximise water quality to benefit you, your property, your stock, plants and downstream users. Many activities can impact on water quality in nearby rivers and creeks, and on other water users.

You need a license from Water NSW to draw any water from a stream or groundwater source for irrigation. This includes water in dams that has been pumped from a stream or groundwater source.

Farm dams

Under the NSW Farm Dams Policy, landholders have a harvestable right. This allows landholders to capture 10 per cent of the rainfall runoff from their properties and use it for any purpose without needing a licence from Water NSW.

REGENERATIVE AGRICULTURE

Key outcomes:

- Improves soil health
- Increases biodiversity and supports natural ecology
- Increases resilience to climate change



Ecosystems are improved by increasing diversity



Organic matter helps build soil & enhances soil microbiome



Cover cropping takes carbon out of atmosphere and funnels into soil

The amount you are entitled to, in megalitres or dam capacity, is calculated by a formula known as the Maximum Harvestable Rights Dam Capacity (MHRDC). This formula involves your property size, area specific rainfall and run-off calculations.

Groundwater

You need to get a licence before drilling a bore in NSW. Licences are issued by Water NSW, with conditions that specify how much water you can use and for what purpose.

Riparian Zones

The riparian zone is the area directly influenced by a river (the river bank), creek, watercourse or drainage line. The zone generally extends from the normal water level to the floodplain.

Healthy riparian vegetation – native trees, shrubs and ground cover along waterways – will make your creek banks more stable and help prevent erosion. The vegetation will also filter out nutrients from surrounding paddocks, and support and create habitat for native wildlife.

Some methods to control degradation and loss of riparian vegetation include:

- encouraging the growth of a 20m native vegetation buffer along the riparian zone
- minimising the number of tracks and trails leading

to your riparian area minimising ground disturbance during weed control activities in the riparian zone

- minimising herbicide and pesticide use in the riparian zone – ensure that pesticides and herbicides are registered for use in these areas
- protecting riparian areas from stock by fencing and providing alternative water sources and shade areas
- revegetating degraded and eroded riparian areas with native vegetation.

Native Plants and Animals

By planting species that are local to your area, you can help to increase the amount of habitat available for native wildlife as well as using species that are best to grow well in your local environment.

As a rule of thumb, any patch of native vegetation is valuable. Even isolated paddock trees provide food and shelter for wildlife. Across a rural residential development or farm, a minimum of 30 per cent cover of native vegetation will help productivity and maintain ecosystems.

Together with your neighbour's vegetation and others nearby, there may also be a viable local core habitat area or 'corridor' of vegetation for native animals.

There is a range of ways that you can receive assistance to look after native vegetation and wildlife habitats on your property.

Looking After the Land

Native animals

In NSW all native animals are protected. This means that it is illegal to kill, harm or trap native animals, unless licensed otherwise. Most people who have moved to this region have a connection to nature and seek ways to make their property more native animal friendly. Some ways you can do this include:

- plant a variety of local native plants on your property
- build a wildlife corridor with a belt of local native plants that connect neighbouring bushland if possible, as these provide habitat for a range of birds and small mammals
- leave large trees with hollows intact for birds and fallen timber logs as a safe habitat for frogs and other small native animals
- in drought, provide safe bird baths and other watering points
- if you find a sick, injured or orphaned native animal, contact WIRES: www.wires.org.au
- search for potential threatened species on your property and report sightings via the NSW BioNet website: www.bionet.nsw.gov.au
- BirdLife Australia offers information on species identification, building and installing nesting boxes and bird baths. www.birdlife.org.au

Koalas

They are one of Australia's most iconic animals, recognisable around the world. However, koala populations are under increasing pressure. Koalas are considered to be 'vulnerable' i.e. they face a high risk of extinction. Whilst we are fortunate in the Byron Shire that koalas have been sighted from the coast to the hinterland, they are under threat and need extra consideration.

Across the Byron Shire, koalas have been seen in the urbanised areas of Byron Bay, Bangalow, Suffolk Park, Federal, Possum Creek and Ewingsdale. Koalas are

also commonly seen in the rural areas of Mullumbimby Creek, Tyagarah, Brunswick Heads and Broken Head. In these areas koalas are often in their favourite food trees such as Tallowwood, Swamp Mahogany, Grey Gum and Forest Red Gum. Mothers will train their young to return to the same trees for feeding.

The greatest threat to the long-term survival of koalas is destruction of their habitat. Many of the remaining belts of eucalypts along traditional koala routes have become severely fragmented, which increases their susceptibility to disease, motor vehicles and dog attacks. Koalas are under greater stress because food is harder to find and they spend more time on the ground as trees are further apart.

Council and Bangalow Koalas are encouraging landholders to plant koala food trees that link up existing patches of koala habitat, to create a continuous corridor for food and shelter. To get involved, contact Councils Biodiversity Officer or Bangalow Koalas.

Snakes

Several species of venomous snake live in the Byron shire. The snake season usually lasts from about late August to early March. The following actions can reduce the chance of snake bite:

- remove loose sheets of tin and other cover from around the house
- keep frequently trafficked areas and those around buildings mown
- wear enclosed leather shoes when walking in long grass or near creeks or farm dams
- do not walk outside in thongs or bare feet on warm nights
- let snakes pass through and away from your house or paddock, but if they decide to take up residence call a snake catcher
- avoid taking dogs for walks near long grass or river sides in the warmer months when snakes are likely to be breeding.



In NSW all native animals are protected.



Photo © Brunswick Valley Landcare

When choosing plants consider species native to your area. Brunswick Valley Landcare run helpful field days.

Byron Shire Biodiversity

Biodiversity is all life on earth and the systems that interact with and support it. Supporting a range of species, habitats and therefore systems helps to maintain the ecosystem services of the landscape. This includes:

- maintaining soil stability and reducing erosion
- increasing water infiltration and maintaining water quality
- ensuring water, carbon, nutrients and oxygen is cycled through the landscape
- pollination of plants, and reducing pest animals and plants.

The best way to support biodiversity is to ensure that there are areas on your land that are set aside for native vegetation and animals, or used infrequently.

Weeds

A weed is usually called a plant 'in the wrong place at the wrong time'. Plants are weeds if they cause environmental harm, choke out native vegetation, or harm agricultural production or are toxic to stock. Weeds can be a major problem to rural properties because of the impact they have on pastures, crop and stock, and can harm humans.

The effects of poor weed management are:

- loss of native species and their habitat
- reduced land productivity and water quality
- increased control costs as weeds spread
- soil degradation and erosion.

Landholders have an obligation to control State Priority Weeds on their property. State Priority Weeds are those weeds that have been declared as such in the *North Coast Regional Strategic Weed Management Plan (2017-2022)* and have a detrimental effect on the environment and production.

Looking After the Land

You can control weed seed by stopping the weed from growing and removing vegetative plant parts including roots, stems, branches, stolons, tubers or other plant parts that may allow the plant to grow.

Trained bush regenerators in the Shire can assist landowners in removing weeds and establishing pastures and native bush. Local Landcare groups often maintain a register of such qualified contractors. Joining a local landcare group can be beneficial.

Soils

Healthy soil balances the relationship between good soil fertility, good soil physical properties and good soil biology. Soil fertility can refer to the amount of available nutrients or the soil chemistry. It can also refer to things like soil pH and soil salinity. The physical nature of the soil, for example soil depth can have a huge influence on the water holding capacity of a soil.

Soil structure and texture also reflect the characteristics of the soil and its ability to be used for different agricultural uses. Soil biology can be important in the health of the soil and can also influence the soils physical and chemical nature.

Soil erosion caused by wind and water can be exacerbated by animals (overgrazing), vehicles and vegetation removal. Erosion strips valuable top soil from your property. It reduces the productivity of your land, and pollutes creeks and dams with muddy water that is full of nutrients.

The best protection against erosion is adequate ground cover vegetation. Native grasses can often provide the most durable protection for your soil.



Ensure areas are set aside for native vegetation to support biodiversity.

Managing Erosion

Erosion results in topsoil and other matter being washed or blown from your property, meaning the loss of valuable nutrients and organic matter – your growing ‘medium’.

Some soils are very susceptible to erosion. Factors such as slope, rainfall intensities, and natural groundcover can all influence natural erosion rates. Over-stocking or over-cultivating paddocks also leads to erosion.

You can help to minimise erosion and retain topsoil on your property by using the following practices:

- ground vegetation should provide at least 70 per cent ground cover at all times. Ground cover should be as high as possible at all times, especially around riparian areas or steep slopes
- rotate your activities to rest the land and maintain continuous grass cover in grazing paddocks
- plant windbreaks and establish native plants along creeks and farm roads to help filter out sediment and nutrients
- protect and enhance existing native bushland. When choosing plants, consider species that are native to your area. It's worth joining your local Landcare group.

Where to Find More Information

Bangalow Koalas: www.bangalowkoalas.com.au

Brunswick Valley Landcare:
www.brunswickvalleylandcare.org.au

WaterNSW: www.water.nsw.gov.au

NSW Local Land Service:
www.lls.nsw.gov.au/regions/north-coast

The North Coast Regional Weed Management Plan: www.northcoast.lls.nsw.gov.au/__data/assets/pdf_file/0006/722760/north-coast-regional-weed-management-plan.pdf

NSW Department of Primary Industries:
www.dpi.nsw.gov.au

Rous County Council Weeds Plan:
www.rous.nsw.gov.au

Soil Care: www.soilcare.org

Weeds Australia: www.weeds.org.au

WIRES: www.wires.org.au

Friends of the Koala: www.friendsofthekoala.org

NSW BioNet: www.bionet.nsw.gov.au

BirdLife Australia: www.birdlife.org.au

Local Story

Dingo Lane Farms

Promoting Biodiversity on Farms for Sustainability

Background

Lindsay Murray has always been interested in farming; it is clearly in his blood. He grew up on his parent's rice farm, a soldier settler block, in the Riverina region of New South Wales. Even from a young age Lindsay felt that the traditional way of farming in that region was not working. He saw that big scale farming caused big scale problems including rising salinity levels and a dependency on the banks. As time went on, the family farm was no longer the self-sustaining farm it set out to be. There were six children in his family, the rural recession kicked in and there was a feeling that farming no longer offered a future. He went off to university to study Medicine.

"During my career as a city based Medical Practitioner, I regularly visited the Byron region for holidays and dreamt of one day living on the land. In 2005 my partner and I bought on a bit of a whim, a relatively small farm on approximately 6.5 hectares (16 acres) in the Myocum Valley just outside of Mullumbimby in the Byron Shire. That was the start of it!"

He says originally he wasn't planning to live there, but it soon got in his blood and he realised that this small

farm wasn't going to be enough for him! In 2010 he sold up in the city and, together with his brother Roger, bought the 50 hectare (130 acre) block on offer next door and created "Dingo Lane Farms". In 2017 they had the opportunity to purchase another neighbouring block of 40 hectare (100 acre). Cattle are also agisted on land belonging to a neighbour, so in total the land managed today is about 120 hectare (300 acre).

Creating Biodiversity through Regeneration

Outsiders may have thought the land he bought was a piece of paradise but the reality was it was very degraded after years as a dairy farm followed by decades of virtual abandonment. The pastures were degraded, there were steep swaths of camphor laurels up the hillside, lots of lantana, degraded creeks and very little or no native vegetation left from the once abundant Big Scrub. Where to start! Dingo Lane Farms was formed and this once neglected ex-dairy farmland, was about to be transformed.

Lindsay's approach is all about creating greater biodiversity on farms, with land management strategies aimed at continual enhancement of the health of the soil, water and vegetation on the land.

His farm production emphasis is on the preservation of rare and threatened heritage livestock species. It is now the home of a thriving herd of the beautiful and rare British White cattle as well as breeding flocks of a variety of traditional heritage breed farm chickens, turkey and geese. For Lindsay, the challenge is to help preserve rare or struggling breeds that have merit and deserve to be preserved. From time to time Lindsay sells the heritage breed chickens direct from the farm by appointment. Purchase of other poultry, British White cattle or pasture-fed beef can also be arranged by contacting the farm.

"Overall, what's important is not just a healthy rural lifestyle, but the environmental stewardship of the land. I believe that all farmers have the responsibility to improve the land they are on; not just produce food for communities they live in, but also to restore it back to ecological good health. Too often people move to this area wanting a suburban lifestyle, but in the bush, with no care or responsibility taken for the land."

Lindsay's approach is to improve the land, creating habitat for native animals. By focusing on the soil health, by improving the pastures so they are in balance with a mix of food for insects, butterflies



Photo © Anne Briggs

Improving the land by creating habitat for native animals.



Lindsay's land management practices focus on enhancement of soil health, water and vegetation.

and birds, by restoring degraded creeks with native vegetation, he believes the rest will follow.

“One of the measures of good environmental health I believe, is the number and variety of birds on the property, and as ecological restoration efforts progress, the restoration of rainforest and wetland habitats over the past 15 years is starting to show results by providing improved habitat and food supply. So far, I am proud to say we have identified 90+ bird species resident or visiting Dingo Lane Farms.”

The Cost of Restoration

All this restoration comes at a cost. Lindsay is keen to point out to people moving to the area that they need to be mindful that restoration of land is hard work and can be expensive, depending on how you go about it and who does the work (for example, contractors vs. personal effort). You need commitment, hard work and funding to restore the land. He is grateful to have received grants from Council and Local Land Services along the way that have helped supplement the costs of some of the restoration work.

However the satisfaction from restoring your land can be immense and there are trained Bush Regenerators who can assist.

www.dingolanefarms.com.au

Checklist Dos and Don'ts

Do have a plan for restoration and work away at it bit by bit.

Do seek government and other grants that are on offer for restoration – they are often a good way to get involved with neighbours to help restore wildlife corridors.

Do persevere – restoration takes time, energy, effort and money but it pays off in the long run with improved biodiversity, improved pastures and environment.

Don't move to this area wanting a suburban lifestyle, but in the bush, with no care or responsibility taken for the land – as a landowner you have a responsibility to care for the land and improve it.

Don't give up – restoration of land does take effort but improving the land pays off in the long run.

Don't forget about council approvals for any rental properties you are planning on site.



Chapter 6

Biosecurity on Farms

Farm biosecurity is important to protect your property and the region from the entry and spread of pests and diseases. New pests or diseases on your farm could mean increased costs, reduced productivity or loss of markets and impact the region's food industry.

Biosecurity means protecting the economy, environment and community from the negative impacts of pests, diseases and weeds. Biosecurity is essential to ensuring the safety, well-being and prosperity of all people.

We are lucky in Australia to have strong quarantine regulations and have managed to remain safe from many threats as a result of this but it is a constant battle to keep on top of biosecurity.

Farm biosecurity is a set of measures designed to protect a property from the entry and spread of pests and diseases. Farm biosecurity is your responsibility, and that of every person visiting or working on your property.

If a new pest or disease becomes established on your farm, it will affect your business through increased costs (for monitoring, production practices, additional chemical use and labour), reduced productivity (in yield and/or quality) or loss of markets. Early detection and immediate reporting of an exotic pest or disease increases the chance of effective and efficient eradication.

Australia has a Farm Biosecurity program which is an important part of Australia's emergency animal disease and exotic plant pest surveillance systems. Surveillance allows us to preserve existing trade opportunities and provides evidence of Australia's pest and animal disease status to support access to international markets.

The government agency that works with farmers on biosecurity issues is NSW Local Land Services. The information in this section has been adapted from *Rural living handbook, A guide for rural landholders, NSW Local Land Services*.

Disease Control

The key to controlling the spread of diseases is prevention and early action. The isolated nature of Australia means that we are in a unique position to be able to protect and quarantine before some diseases even enter the country.

Biosecurity measures also focus on efforts to protect us from risks that are in Australia, but have not yet entered the state.

Pest Animals

Pest animals and insects cause serious economic losses to agricultural production, unacceptable risk of exotic disease, threaten the survival of many native species, and cause environmental degradation including erosion.

Landholders have a legal obligation to eradicate declared pest animals on land they own, occupy or manage.

Current species declared as pests in NSW include rabbits, feral pigs, wild dogs, foxes and a number of locust species.

Pests can introduce disease and out-compete native animals for food and shelter, as well as injuring or killing livestock and damaging crops and pastures.



Photo © NSW LLS

Feral pigs can cause a lot of damage on farms.

Biosecurity on Farms

If it can move, it can carry diseases, pests and weeds. For this reason, people, vehicles and equipment pose a high biosecurity risk and should be managed accordingly.

Vehicle and Equipment Biosecurity on Farms

People can unintentionally carry diseases, pests and weeds without even realising. To limit the risk of visitors carrying new pests and diseases onto your property Farm Biosecurity recommend the following:

- limit entry points to access the property – ideally there should only be one access point so that all movements can be recorded and you always know who is on your property
- direct all visitors to a designated parking area by using clear signage, and ask them to report to management and sign a visitor register
- all visitors to the property must ensure that their vehicles, equipment, boots and clothing are clean and free from pests, weed seeds and plant material
- all visitor vehicles, equipment and boots should be cleaned upon entering the property in a wash-down bay
- any visitor who refuses to clean vehicles, equipment and boots, or cannot demonstrate that their clothing is clean should be refused entry
- limit visitor contact with livestock, crops or plant materials as much as possible and eliminate any unnecessary contact
- if you run a business that has a tourism component, you'll need to clearly indicate any entry requirements and be especially vigilant in checking for new pests and diseases
- disinfect hands before and after coming into contact with livestock, plant material or soil
- ensure that staff and occasional workers clean and disinfect equipment such as pruning shears in-between uses on different properties
- ensure all your staff are familiar with the basic symptoms associated with a pest or disease outbreak and know how to report them.

Top Tips for Biosecurity on Small Farms

1. Know the risks, rules and requirements

- stay up-to-date with the rules and regulations for keeping livestock through the relevant government agencies (NSW LLS, Department of Primary Industries)
- be familiar with disease, pest and weed risks in your area
- be aware of what you can and cannot feed to livestock.

2. Have a plan

- a biosecurity plan can help you to prioritise, manage and mitigate risks on your farm and reduce costs in responding to a disease, pest or weed outbreak



Photo © Anne Briggs

- coordinate with your neighbours on feral animal, pest and weed control plans
- pre-planning for emergency events such as natural disasters can speed recovery after the event.

3. Keep records

- compulsory records such as those for livestock movements and records such as animal treatments, on-farm chemical usage and vendor declarations, are vital to producing safe and traceable food
- ask for health certificates appropriate to your farm when you purchase your land.

4. Control and patrol

- aim for one signed entry point onto your farm to control visitor entry
- keep a visitor register
- undertake frequent monitoring of your farm environment.

5. Spot something unusual? Report immediately

- if you notice unusual report immediately to LLS.

Where to Find More Information

Farm Biosecurity: www.farmbiosecurity.com.au

NSW Department of Primary Industries

Report notifiable plant pests and diseases by one of the following methods:

- › Call the Exotic Plant Pest Hotline 1800 084 881
- › Email with a clear photo and your contact details to: biosecurity@dpi.nsw.gov.au
- › Complete an online form which can be found at: www.dpi.nsw.gov.au/biosecurity/report-a-pest-or-disease or by contacting your Local Land Services office on 1300 795 299

NSW Local Land Services: www.lls.nsw.gov.au

Local Story

Brunswick Valley Landcare

Conserving and Restoring from Forest to Foreshore

Brunswick Valley Landcare (BVL) and its regenerative agriculture arm Farming Into the Future (FITF) is a long-standing volunteer organisation assisting the community in natural resource and land management. BVL works to integrate the region's diverse vegetation, sub-tropical rainforests, sclerophyll forests, coastal heathlands, beaches and dunes, towns, tourism, farmlands and farm forests.

BVL is strongly focussed on supporting our wide community: families, farmers, producers, landholders, towns, schools and local government.

Managed by a volunteer committee of seven with two support officers, BVL also supports 32 locality groups of volunteers spread across the Byron Shire in addition to many farmers, landholders and towns.

The Group is funded by memberships, donations, government grants, assistance from Byron Council, community goodwill and voluntary input.

BVL and FITF have a strong focus on field days, workshops, and seminars; educating, showing, demonstrating natural resource management. They work in areas including: weed management, rainforest regeneration, agroforestry, riparian management, water quality, regenerative agriculture, soil health, native plant diversity, habitat creation and native gardens.

BVL produces a monthly newsletter containing information on a range of topics from farming to fauna, informs landholders of upcoming grant opportunities and assists landholders in gaining grants to restore land and waters.

The popular Land For Wildlife land registration programme is provided regionally by BVL.

www.brunswickvalleylandcare.org.au



Brunswick Valley Landcare have a strong focus on field days, workshops, and seminars.



Chapter 7

Chemical Safety on Farms

All farmers need the necessary training before embarking on storing, using or transporting any farm chemicals. A number of local organisations offer training and advice. National programs called drumMUSTER and ChemClear have been set up to help farmers safely manage their farm chemicals.

Chemical Safety on Farms

Council supports small regenerative farming practices and encourages organic farming where possible. However it is not always possible to run farming practices without the use of chemicals and it is a fact of life that chemicals such as fuel, fertiliser and pesticides are commonly used to help run rural properties.

These chemicals are often dangerous, some are flammable, most are poisonous and all can be harmful to the environment if used incorrectly. For example, they can pollute waterways, particularly if they are stored or used near creeks and rivers.

There is a legal requirement to read the label and follow all directions on the container.

This is necessary to ensure the safety of you, your family, your animals, native wildlife and our precious waterway river systems. Considerable fines can be imposed for failure to transport, store, apply and dispose of chemicals and containers properly.

There are also legal requirements to keep records of pesticide use and for pesticide users to undergo training.

Safe Chemical Use: Firstly Undergo Training

All farmers are required to undergo the necessary training before you embark on storing, using or transporting any farm chemicals. A number of local organisations offer training and advice including NSW DPI and TAFE. National programs called drumMUSTER and ChemClear have been set up to help farmers safely manage their farm chemicals. Agsafe manages both these programs.

The main national and NSW government agencies involved in legislation related to pesticides are the Australian Pesticides and Veterinary Medicines Authority (APVMA), NSW Environment Protection Authority (EPA) and Safe Work NSW. These agencies are the best place to contact to find out about safe chemical use and we recommend you contact them

for more information as well as undergoing training courses in safe chemical use.

You must undergo training, read the label and understand the information in it, before you use a chemical. Some chemical containers also have a small booklet of information. The booklet is part of the label, and it must also be read before using a chemical.

The Australian Pesticides and Veterinary Medicines Authority have produced a useful guide called “Understanding Pesticide Chemical Labels”.

Chemical Names and Terms

Chemicals are labelled by brand name (or trade name) which is the common name for the chemical product.

There is also a broad description of what the chemical does. Common terms are:

- herbicide = kills plants
- insecticide = kills insects
- fungicide = kills fungus diseases
- nematicide = kills nematodes (tiny worm-like creatures, that usually live in the soil)
- molluscicide = kills molluscs (slugs and snails).

All of these types of chemical products, even household chemicals, are carefully labelled so users know how toxic the chemicals are to humans and how to achieve the best possible results, with minimum personal and environmental risk, when using them.

Signal Headings on a Chemical Label

From a personal safety viewpoint, the Signal Heading is one of the most important pieces of information on a chemical label. This is printed at the top front section of the label.

Most herbicides, insecticides or fungicides carry one of these three Signal Headings:

- CAUTION
- POISON
- DANGEROUS POISON



Photos © drumMUSTER

Farmers are required to undergo training before embarking on storing, using or transporting any farm chemicals.

A product that is **Unscheduled** according to the Poisons Schedule requires no Signal Heading.

However you may find a variety of other phrases in the Signal Heading position on the label, such as:

- Keep Out of Reach of Children
- Read Safety Directions Before Opening or Using, or
- in some cases, a combination of both.

Degree of Hazard

Chemicals are categorised according to their toxicity, often referred to as their degree of hazard. These range from slight through to low, moderate and high.

Chemicals in the low to high hazard range are required by law to be registered through the Poisons Schedule:

- the Schedule is numbered and runs from Schedule 5 (low hazard) to Schedule 7 (high hazard)
- a chemical that only presents a slight hazard is classified as **Unscheduled**
- a Schedule 7 chemical is not permitted to be sold, stored or used in domestic/urban situations.

Active Constituent

This is the name of the actual part of the chemical that does the work. That is, the part that kills the weeds or insects or other pests. The concentration of the active constituent is also given.

Some products contain a solvent to dissolve the active constituent. These solvents can sometimes be poisonous, and in such cases the amount and name of the solvent is shown on the label under the heading 'Solvent'.

Transporting Farm Chemicals

Everyone transporting farm chemicals has a duty of care and a responsibility to carry out tasks in a manner that will not cause harm or injury to themselves, other people, their property, animals and the environment. Before moving chemicals read information provided on the transport requirements of individual chemicals which are often found on the label or 'Materials Safety Data Sheet'. Again, undergoing appropriate training courses will assist.

If you use agricultural chemicals you are legally responsible for ensuring that empty containers and unwanted chemicals are disposed of safely.

Storing Chemicals Safely on Farms

NSW Department of Primary Industries offer a series of informative fact sheets for farmers in their "Spray Sense" series. We have provided an excerpt from one of their fact sheets on storing chemicals safely, which offers the following advice to farmers.

Store features

It is very important for you to store hazardous chemicals correctly. These materials pose a great threat to the safety of you, the people working with them but also to the wider community and the environment.

In some cases your storage area may need to be licensed. This will depend on the type of substance you are storing and the quantity.

Contact WorkCover for details

It is important that the pesticides are stored in an appropriate designated store, that is isolated, secure

Chemical Safety on Farms

and where any spills or emergencies can be dealt with. Access must be restricted to authorised people.

Design features to consider for a store

The storage facility must be designated only for the storage of pesticides.

Small quantities

For small quantities of pesticide a steel cabinet may be suitable.

The building

The store must be constructed of fire resistant material. These materials include brick, concrete, steel and galvanised iron. Other fire resistant materials may also be suitable. Other considerations include:

- the floor should be constructed of material which is impervious and resistant to chemical erosion This will help to prevent contamination of soil and water and in cleaning up any spills
- a lockable door to keep dangerous goods secure or child-proof latch if no dangerous goods are stored
- shelving should be made of impervious material. Absorbent materials like timber are not suitable. For small quantities of pesticide, place the containers on impervious trays
- ventilate well to ensure fumes do not build up
- ensure good lighting to make labels easy to read
- sufficient storage shelving to be able to separate different groups of pesticides
- do not store liquids above powders and granules
- access to water for washing and cleaning, with access to an eye wash and an emergency shower.
- it should be a cool, dry place, which is out of direct sunlight. Ideally with temperatures restricted between 5° and 30° C
- have clear access to avoid hazards whilst carrying chemicals
- water from the wash-down and filling areas should drain into a sump.

Cleaning containers for disposal

You can store rinsed containers in a safe location until the next drumMUSTER collection is advertised in your area.

You should rinse containers on fallow ground away from drains and waterways, and always wear personal protective equipment as specified on the label for applying, mixing and loading the pesticide.

To ensure your containers are suitable for delivery to a collection centre always follow these procedures:

- triple or pressure rinse your containers immediately after use and pour the rinse water back into the spray tank
- thoroughly clean the container thread and outside surfaces with a hose into the spray tank. Rinse all



Photo © drumMUSTER

Programs such as drumMUSTER have been set up to help farmers safely manage farm chemicals.

- caps separately into a bucket of clean water and pour rinsate into the spray tank
- inspect the container, thread and screw neck to ensure all chemical residue has been removed
- puncture metal containers through the neck/pouring opening and through the base of the container
- allow containers to drain completely and air dry them over a number of days.

Where to Find More Information

General

Australian Pesticides and Veterinary Medicines Authority (APVMA) “Understanding Pesticide Chemical Labels”: www.apvma.gov.au/sites/default/files/publication/67431-understanding_labels_booklet_2020.pdf

NSW Department of Primary Industries: www.dpi.nsw.gov.au/agriculture/chemicals/farm-chemical-management

NSW Environment Protection Agency (EPA): www.epa.nsw.gov.au/your-environment/chemicals

SafeWork NSW: www.safework.nsw.gov.au/hazards-a-z/hazardous-chemical/farm-chemicals

drumMUSTER: www.drumMUSTER.com.au

ChemClear: www.chemclear.org.au

Training

NSW Department of Primary Industries, Tocal Agricultural College: www.tocal.nsw.edu.au/courses/short-courses/smarttrain-chemical-safety-and-training

NSW EPA: www.epa.nsw.gov.au/your-environment/pesticides/compulsory-training-pesticides



Chapter 8

Managing Waste on Farms

Byron Council have a vision to support a land-fill free, net zero carbon in the region, to reduce waste to landfill, reuse and recycle and to find solutions to recover, treat and dispose of waste. The waste hierarchy and circular economy frameworks underpin the council's strategy.

Guiding Principles of Waste Management in the Byron Shire

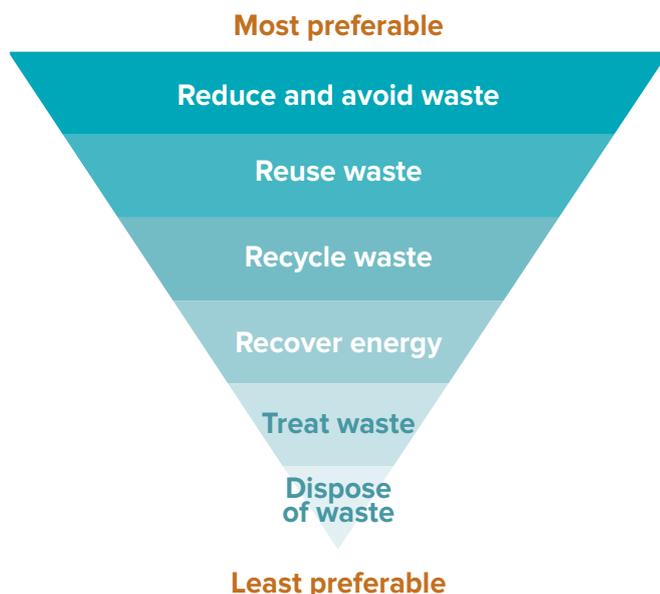
In this region we are very aware of the impacts of waste and pollution on the environment, climate and health. Byron Shire Council have a big vision is to support a land-fill free, net zero carbon in the shire by working with the community to reduce waste to landfill, reuse and recycle and to find solutions to recover, treat and dispose of waste.

The waste hierarchy and the circular economy model are frameworks that underpin the BSC *Towards Zero Strategy (2019 – 2029)*:

Waste hierarchy

The waste hierarchy is a conceptual framework behind waste policy in this region which prioritises managing waste, based on environmental impact and sustainability:

- avoiding waste in the first instance – reducing consumption



Adapted from: Byron Shire's Integrated Waste Management and Resource Recovery Strategy

- reuse such as bags and cups, buying second hand goods, extending the life of a product
- recycling and composting
- products and materials with no higher order uses can be converted to energy, offsetting greenhouse emissions from conventional electricity generation
- landfill disposal is a an essential backstop, but should be the last option.

Circular economy

The circular economy model, takes things a little bit further. It considers the whole supply chain as a network of pathways designed to circulate materials, minimising waste and environmental impact. For example:

- manufacturer's designing products for disassembly (and using recycled products)
- retailers selling second hand and remodelled items
- consumers, including businesses buying recycled products
- council optimising resource and energy recovery at its waste facilities.

Waste Management on Farms

Use less

We all need to aim to avoid waste in the first instance. Here are some ideas for starters:

- a lot of household waste starts with shopping – always take your re-useable shopping bags with you and be careful about the types of products you choose. Become a conscious consumer and only buy what you need
- repair and re-use items. If you're not that handy, there are people around who may be able to help. Our community have a lot of talented tradies that can help repair items. Mullumbimby offers a Repair Cafe. They help you fix common household items in a community atmosphere
- clean out your cupboards and gather all those things still in working condition that are no longer needed.



Photo © Australian Macadamia Society

Compost adds organic matter to improve soil health.

Take them to a local charity or drop off working household items to Byron Resource Recovery Centre Second Hand Shop

- buy second hand – you can find lots of useful items for building repairing or just to use as is on community swap and sell sites and also at the Byron Resource Recovery Second Hand shop
- chickens are a great way to use food scraps and produce fresh eggs.

Composting

Compost is a way of returning organic matter, or humus to the soil. Even though organic matter may be a relatively small fraction of soil content, it can have a dynamic influence on the health of the soil as a whole.

There are many items on the market that claim to be “compostable” and “biodegradable”, however they may be mixed materials or they may not have been tested. Check for the Australian compost standards AS 5810: Home compostable and AS 4736 Compostable.

You can also drop off your green garden waste at the Byron Resource Recovery Centre then it is processed onsite into mulch that can be purchased by the public. Our very own Closed Loop System.

Recycling and reuse

Byron Council offers a recycling guide on their website. You can usually recycle a large number of materials, including:

- paper
- cardboard
- plastic bottles (numbers 1-6)
- steel cans
- aluminium cans
- glass jars and bottles



- juice and milk cartons
- aluminium foil (in large clumps).

Make sure you rinse items, don't bag or box items, no plastic bags and nothing smaller than a credit card.

Problem and hazardous Items

We have a Community Recycling Centre at the BRRC that allows you to drop off:

- gas bottles
- paint
- fluoro globes and tube
- car batteries
- household batteries
- motor oils
- other oils
- smoke detectors and mobile phones.

You can even bring your drumMUSTER drums to the BRRC.

Dumping items on private or public property can result in adverse environmental effects, such as pollution, litter, hazards to wildlife and native plants. If you are unsure of what to do with items you can call the Resource Recovery hotline 1300 652 625.

Burning

Burning waste, such as household rubbish and garden clippings, has a negative impact on air quality. Council's policy is to minimise burning off in Byron Shire. If you must burn off in rural areas, a permit is required during bush fire danger periods. A fire permit is required to carry out open-air burning at any time in urban areas. Fire permits are issued by the Rural Fire Service (RFS).

Managing Waste on Farms

Safe Septics

If you live in or rent a house that is not connected to the Council's sewer, then you should have an on-site sewage management system. If this is the case then you have a responsibility to ensure that it is working as well as it can.

It is important to keep in mind that maintenance needs to be performed properly and regularly. Poorly maintained on-site sewage management systems can significantly affect you and your family's health as well as the local environment and lead to expensive repairs or replacement costs.

Different types of systems

Typically the systems listed below provide treatment and safe disposal of household wastewater in a way that the likelihood of adverse impacts to public and environment health are minimised.

- septic tank
- aerated wastewater treatment system
- holding tank with pump out
- wet composting toilet
- sand filter system
- grey water treatment system
- waterless composting toilet

These systems are all classified as on-site sewage management systems (OSMS) and require council approval to install or alter. All owners require an approval to operate. Council will carry out operational inspections on these systems from time to time or on request.

Management of your septic tank

The effective operation of the septic tank and disposal area will, depend on how well it is managed and maintained. A small amount of maintenance work performed regularly can prevent your system from failing. The following is a guide on how to achieve the most from your system.

Things to do:

- ensure your wastewater system is the appropriate design for the area. Inappropriate systems can pollute the natural environment and pose health risks to humans. Talk with council for impartial advice
- know where your disposal area is so you can regularly maintain and monitor it. Contact council we usually have plans that help you locate the system
- have your septic tank de-sludged every three to five years to prevent sludge build up, which may 'clog' and the disposal area absorption trenches
- keep the disposal area as dry as possible i.e. divert all stormwater away from that area eg. construct a diversion drain upslope and divert rainwater tank overflows to another area

- avoid diverting stormwater into neighbouring properties
- ensure your tank is well sealed. This prevents the entry of vermin and mosquitoes
- conserve water. The less water you use the drier the disposal area will be, especially through the wetter months
- check household products for suitability for use with a septic tank. Use biodegradable liquid detergents, with low phosphorous and low sodium
- have your grease trap (if installed) cleaned out regularly i.e. three monthly
- keep a record of pumping, inspections, and other maintenance.

Things not to do:

- don't allow livestock to graze on the disposal area. This can lead to compaction and collapse of the area
- don't drive vehicles or build structures or gardens over the disposal area
- don't put large quantities of bleaches, disinfectants, whiteners, nappy soakers and spot removers into your septic tank via the sink, washing machine or toilet. These products can kill off the good bacteria needed to breakdown wastewater solids
- don't allow any foreign materials such as nappies, sanitary napkins, condoms or other hygiene products to enter the system
- don't put fats and oils down the drain and keep food waste out of your system
- don't install or use a garbage grinder or spa bath if your system is not designed for it.

Where to Find More Information

Byron Shire Council:

Towards Zero – Draft Integrated Waste Strategy 2019 to 2029: www.byron.nsw.gov.au/Services/Waste-recycling/Towards-Zero-Draft-Integrated-Waste-Strategy-2019-to-2029

www.byron.nsw.gov.au/Services/Building-development/Other-approvals-and-permits/On-site-sewage

What you can and can't recycle: www.byron.nsw.gov.au/Services/Waste-recycling/Recycling

Mullumbimby Repair Café:

www.facebook.com/therepaircafe

NSW Rural Fire Service:

www.rfs.nsw.gov.au/__data/assets/pdf_file/0020/106814/Farm-Fire-Plan.pdf

Local Story

Hemp Collective Byron

Aiming for Zero Waste

Background

Maxine and Mike Shea are the owners of Hemp Collective Byron, based in Mullumbimby. They grow their own low-THC hemp and create a range of unique top quality hemp body care products including solid shampoo and conditioner bars, hemp soaps, pet shampoo and balms.

Their Hemp Collective journey started eight years ago while living in New Zealand when Maxine was diagnosed with a rare pituitary brain tumour. This unexpected diagnosis was to change the course of their lives. In her research she discovered the amazing health benefits of hemp. This was the seed of an idea for a new business.

Why Hemp?

Maxine and Mike explored many options for businesses – they knew they wanted to utilise their previous business skills and create value-added hemp products. They explored further the qualities of hemp and its many uses, specifically for the body care product market. After conducting their own research they confirmed the ingredients in body products were very important for good health yet most people didn't really understand this. They decided they wanted to focus on producing top quality healthy body products made with locally grown hemp – Hemp Collective Byron was created!

“When I was diagnosed with a rare pituitary brain tumour, I became tired of being told ‘sorry there is nothing we can do for you’. I decided to feel empowered rather than disempowered and took my health into our own hands. From all our research, hemp and its medicinal benefits are one of the best plant-based sources of Omega 3, 6 and 9 fatty acids. Hemp is also good for the environment, it makes productive use of poor soil and it requires little to no pesticides to cultivate. Hemp seed oil is super healthy being packed with proteins and vitamins. It ticked all the boxes for us.”

Working with Indigenous Elders

The Bundjalung people of Byron Bay – Arakwal Bumberlin people, have lived in the coastal landscape around the Byron Bay area for at least 22,000 years. They are the recognised Aboriginal Traditional Custodians of the Byron Bay district.

When Maxine and Mike moved to the region it was important for them both to receive some sort of blessing from the Arakwal Elders in the region before they started growing their hemp. The land owners invited the local Elders to the property to better understand the history of the land and if they were happy for them to grow their hemp there.

“The farm we lease is in a beautiful rural region just outside of Mullumbimby. It was important for us to have the consent of the Indigenous elders to farm hemp here. The elders told the owner of the property that the land had been used for women's business and they gave their consent. They said it would be best if women worked the farm which we respected. It's very important to us to work in with the local Arakwal people – we have great respect and would not have farmed here without their consent.”

Managing Waste: Aiming for Zero Waste

For Maxine and Mike, in addition to creating a healthy sustainable product range, it has always been very important to establish an ethical business that is kind to the environment with zero waste. As such, every aspect of their business is focused on a policy of zero waste and they work very hard to make sure they hold true to their social and ethical responsibility about their waste impact. Specifically they:

- buy in bulk which reduces packaging and order raw ingredients from as few suppliers as possible with an aim to source locally where they can
- seek out suppliers who have like-minded values and request minimal packaging with their products
- package all their products with tissue paper (not plastic) and send all their orders in compostable mailers
- have created quality packaging which is recyclable, printed with soy inks and FSC certified printing
- recycle their office waste and packaging, upcycle or reuse packaging that has been sent to them (eg. bubble wrap or boxes).

“Having a circular and zero-waste focus on every aspect of our supply chain is integral to creating a happier healthier world for future generations. One of the many ways we have achieved this is with our product range. We select and make our products with ethically sourced organic plant-derived ingredients, which are vegan-friendly and last for a long time. They contain no sodium lauryl sulphate or parabens



Maxine and Mike Shea have created a healthy sustainable product range with zero waste.

and they are presented in a reusable tin. This in turn helps eliminate plastic waste and decrease our environmental impact by getting rid of plastic bottles.”

First-hand Insights

Maxine and Mike have enjoyed their business journey so far and have learnt a lot along the way. They offer advice for people starting out:

- market research is integral. Have a plan and focus on that, so that you don't get too distracted yet be ready to change and adapt with the times
- be realistic about what is achievable when you are working towards your plan
- always ask lots of questions to people in your industry and connect with people who are already in the industry
- there are many great resources in our region. In particular Maxine and Mike have found Sourdough Business Pathways and Build, Grow, Run very helpful in the start-up stage
- attend industry networking events and get to know who is who in your market
- seek out a good mentor who you trust
- build a community of good people to surround you and your business.

www.hempcollective.com.au

Checklist Dos and Don'ts

- Do** your homework, research the market and ask lots of questions;
- Do** network with your industry and seek out useful resources;
- Do** find a mentor you trust and surround yourself with positive people.
- Don't** get too distracted along the way – stick to your plan but be prepared to change when the market conditions dictate;
- Don't** run a business you are not passionate about;
- Don't** bite off more than you can chew – be realistic about what is achievable.

Where to Find More Information

Sourdough Business Pathways: www.sbp.org.au

Build, Grow, Run Entrepreneur Facilitator Service Byron: www.buildgrowrun.com.au

Business Australia: www.businessaustralia.com

NORTEC: www.nortec.org.au

NSW Department of Primary Industries – Information on growing hemp and the Hemp Industry Act 2008:

www.dpi.nsw.gov.au/agriculture/broadacre-crops/summer-crops/hemp/nsw-hemp-industry



Chapter 9

Livestock Management

Establishing and managing livestock, as a hobby or a primary source of income, can be a daunting and complex task. Getting the right advice is important. There are many regenerative agriculture advisors, livestock consultants and government agencies that can help.

Regenerative Farming

Regenerative practices to manage livestock are recommended so that systems are improved not depleted by overstocking or overgrazing. Practices that help generate systems such as rotating pastures, recycling as much farm waste as possible and adding composted material will help enhance ecosystems.

Animal Welfare

Always ensure that your livestock are well cared for with access to clean cool water and feed and shelter from wind, rain and hot sun. The RSPCA promotes 'Five Freedoms of Animal Welfare', as follows:

- freedom from hunger and thirst
- freedom from discomfort
- freedom from pain, injury or disease
- freedom to express normal behaviour
- freedom from fear and distress.

Owners can be prosecuted by the RSPCA if they don't meet the needs of their animals.

Improving Soil Biology for Grazing

There are many practices which will help improve the health of soils for grazing properties. These include maintaining dense pasture and not overgrazing, planting nitrogen fixing legumes, ensuring nutrients are replenished, adding organic matter to the soil and maintaining healthy pH.

Other helpful practices include keeping stock and machinery off waterlogged paddocks to help prevent compaction, and limiting erosion by using direct drilling rather than heavy cultivation.

Soil biology can be improved by introducing dung beetles which take the dung deep into the soil aerating and cycling nutrients. Earthworms and other invertebrates can also be encouraged by ensuring there is enough organic matter in the soil.

Soil tests are a useful guide and monitoring can help guide you on how to improve the health of your soil.

Regenerative Pastures

The principles of holistic grazing and regenerative agriculture introduces native and naturalised grasses and legumes into the pasture sward, to the great benefit to pasture, soil and stock health.

Native grasses are well adapted to the Australian and local environment. Native grasses also have the benefit of being more drought resilient. Research on many native grasses has shown that, given similar situations, native grasses compare favourably with introduced species. These native grasses are stress tolerators and will persist where 'improved' introduced grasses do not survive.

This region contains some excellent and nutritious native pastures for livestock including Themeda species.

Overall a diverse pasture sward containing a wide mix of grasses and legumes including deep-rooting species will provide better nutrition and will perform better in drought times. Seeking advice from local regenerative agriculture consultants about which species would do well on your particular property and how to go about it may be helpful.

Property Identification Codes (PIC's)

A PIC is a unique eight-character code assigned by NSW Local Land Services to properties with livestock and placed into a district register.

This system holds information identifying land including property names, locations and further details of the trading entity and PIC manager.

In NSW, all properties that run livestock such as cattle, sheep, goats, pigs, bison, buffalo, deer, camelids, equines (ie horses and donkeys) and poultry (100 or more) are required to have a property identification code (PIC) when trading or moving livestock.



Photo © Anne Briggs

You will need to obtain a permit from NSW Local Land Services to walk your stock along a public road.

Stock on Roads

You will need to obtain a permit from NSW Local Land Services to walk your stock along a public road. Routine management movements, either walking or transporting on a more frequent basis, are covered by a routine Stock Movement Permit.

Stock Control Near Creeks, Rivers and Streams

As far as possible, you should keep your livestock away from rivers and streams. You can pump water to troughs placed away from the stream to water stock. This will prevent erosion and degradation of the littoral (water's edge) zone vegetation and environment.

Best practice to provide drinking water for stock involves:

- a pump and trough in the paddock
- a dam in the paddock
- a bore and tanks in the paddock
- a rock ramp down to the water, preferably on the inside of a bend
- controlling weeds along watercourses in the surrounding paddocks.

Wildlife Friendly Fences

Fencing is essential to keep livestock contained, but entanglement on barbed wire fences causes unnecessary deaths of our precious Australian wildlife. Wildlife friendly fences can be retro-fitted to a fence that ideally should have had the top and the second strand as plain wire, not barbed wire. Some other ways to make sure your fences benefit wildlife and stock include:

- use plain wires instead of ring lock or hinge joint
- if possible use white horse sighter wire on the top strand and white caps on steel posts, or treated pine posts
- leave 30 cm between the top wire and the next one down. This is important to avoid kangaroos catching and trapping their legs between the two top wires
- don't use barbed wire as birds and gliders are often caught and killed on them. If existing fences have barbed wire, consider taking that wire out, particularly the top strand
- keep fences at a moderate height, eg. approx. 1.2 metres
- keep the bottom wire 15 centimetres above the ground level
- avoid permanent electric fencing. It can form a significant barrier to wildlife movement, and electrocute native animals on low-level live wires.



Photo © Peter Boyd

Wildlife friendly fences help prevent unnecessary wildlife death by entanglement on barbed wire.

Where to Find More Information

Grazing on Small Farms

Brunswick Valley Landcare:

www.brunswickvalleylandcare.org.au/rural-landholders

Soil Improvement and Testing

Soilcare: www.soilcare.org

NSW Department of Primary Industries – soil

health card: www.dpi.nsw.gov.au/agriculture/soils/improvement/health-card

NSW Department of Primary Industries, Wollongbar – soil testing services:

www.dpi.nsw.gov.au/about-us/services/laboratory-services/soil-testing

Southern Cross University, Environmental Analysis Lab – Soil testing services:

www.scu.edu.au/eal

Email: eal@scu.edu.au

Dung Beetles

Dung Beetle Solutions International:

www.dungbeetlesolutions.com.au

Pastures

NSW Local Land Services: www.lls.nsw.gov.au/help-and-advice/livestock-health-and-production

NSW Department of Primary Industries:

Pastures – www.dpi.nsw.gov.au/agriculture/pastures

Forage and fodder information –

www.dpi.nsw.gov.au/agriculture/broadacre-crops/forage-fodder

Grasses of Coastal NSW –

www.tocal.nsw.edu.au/publications/field-crops-and-pastures/grasses-of-coastal-nsw

Livestock Property Identification Codes (PICs)

NSW Local Land Service:

www.lls.nsw.gov.au/i-want-to/apply-for-a-property-identification-code

NSW Department of Primary Industries:

www.dpi.nsw.gov.au/animals-and-livestock/nlis/pic

Moving Stock on Roads

NSW Local Land Service:

Apply for a permit to move stock on roads – www.lls.nsw.gov.au/i-want-to/apply-for-a-permit

Paddocks and Fencing

Wildlife Friendly Fencing Solutions:

www.wildlifefriendlyfencing.com

Local Story

Byron Grass Fed

Farming with Sunshine



Photo © Anne Briggs

Byron Grass Fed beef farmers use regenerative practices including rotational grazing and no chemicals.

Background

Andrew Cameron moved to the region eight years ago after a stellar career in advertising and marketing in the big smoke. His work at Byron Grass Fed was born from a desire to connect ethical meat producers to like-minded consumers.

Byron Grass Fed beef attracts premium pricing because they have established a reputation for the quality of their meat and because of their farming practices – the cattle have been “fed with sunshine” with rotational grazing, no chemicals, no grain, just grass fed and finished. The farmers use practices that are regenerative, i.e. they work with nature not against to give back to the land rather than simply taking from it.

By bringing the most ethical sustainable farmers together they are able to promote their special premium grass fed and finished beef in the region and are building the Byron Grass Fed brand locally and further afield.

This business model arose when Andrew identified that a lot of farmers just want to farm, they don't really understand how to approach the marketing or selling side of business. He also saw that without proper channels, all their hard work was going unrewarded, in that their meat would end up at the abattoirs with all the other meat and sold for the same price, despite its premium grade and provenance.

With Andrew's marketing background, he went about to connect these committed farmers, who put in the

effort to produce quality grass fed beef from the region, with consumers who are seeking quality local beef products from ethical, sustainable producers. He works with a handful of dedicated cattle farmers (and is always looking for more) to produce under the Byron Grass Fed brand. Andrew sells it directly to consumers at the Mullumbimby and Lismore markets, local retailers, restaurants and online/home delivery.

What is Grass Fed and Grass Finished?

Andrew points out that technically, all cows in Australia are “grass fed” for a part of their life. The problem is that the term grass fed alone doesn’t address the cow’s whole life. In Australia, a cow can be fed grain up to 60 days and still be considered “grass-fed”. At Byron Grass Fed, all the cows are finished on grass too. They only source cattle that are 100% grass fed and finished local to the Byron Bay region (no further than 50km). They are also committed to sourcing only from farms that are committed to chemical free pastures – no sprays and no synthetic fertilisers.

He believes that consumers are just now starting to get it; that they are beginning to understand what regenerative farming is, that it is giving back to the land, healing the land, sequestering carbon and providing healthy food. They are starting to understand why they pay a premium for it too.

Helping Farmers Farm

Andrew says some people move to the region and think that farming cattle that is good for the land will be easy; they take it on as a bit of a hobby and then come to realise down the track that it’s actually a lot of hard work. This is another area where he offers assistance – he helps farmers set up regenerative agriculture systems for their livestock and offers to manage it on their behalf. He believes this is a model that helps us move closer to a more sustainable and healthier food system for the future so that good land is not wasted in the region.

First-hand Insights

Andrew’s advice for people who move to the region and want to farm cattle regeneratively: “don’t overstock, take your time and build more paddocks. Don’t set stock and make sure you seek the right advice”.

Andrew says he benefited greatly from a holistic farm management course when he arrived here and he advises others to do the same. He also points out that you don’t have to do it all yourself. “Farming regeneratively requires a massive commitment. People think it is easy but it requires a lot of hard work, passion, commitment and you need the right infrastructure and capital. The smaller the land size the harder it is to make a living from farming cattle, so if you’re not serious in your commitment to improving



Photo © Anne Briggs

Andrew Cameron encourages farmers to use regenerative practices.

the land, or see it as just a retirement hobby, then either forget it or get the right people to help you out”.

It is important that when starting out you are very clear on WHY you have land and WHY you want to produce from it. I don’t feel it’s something people should do because it seems like a “nice idea”.

“With this model we can grow better farmers in our region and have more land under good management regenerating soils and sequestering carbon as well as feeding the local community with the absolute best food possible. Food that is genuinely local and best for our environment, the local farmer and the end consumer. We need more people farming like this and more people eating this type of food and we will see massive change in the world. As a region I feel this is possible we just need committed land owners.”

www.byrongrassfed.com.au

Checklist Dos and Don’ts

- Do** be clear why you have land and what you want to produce from it
- Do** look at local networks and collaborations with like-minded farmers to support your business model
- Do** consider what is best for the land from an environmental perspective – the region needs good regenerative farmers.
- Don’t** buy land because you think it’s a “nice idea” – be clear about your plans to farm the land;
- Don’t** overstock, take your time and build more paddocks
- You Don’t** have to do everything yourself – you can bring in experts to help you!



Chapter 10

Preparing for Natural Disasters

In this region natural disasters, especially severe storms can occur with little warning. Planning ahead can keep you, your family and animals safe and reduce the impact on your property and business. Neighbours and regional records may help determine the risk level for your property.

Prevent and Prepare

On a rural property, it is very important to prevent and prepare for natural disasters and emergencies. In our region we have experienced cyclones, flood and bushfires in recent times.

Natural disasters, especially severe storms can occur anywhere and with little warning. Everyone should be prepared. Planning ahead of time can keep you, your family and animals safe and reduce the impact on your property and business. Neighbours and regional historical records may help determine if your property is at risk.

Before an Emergency

Before an emergency happens plan in advance so that you:

- know the risk to you, your animals and property
- know where to go
- know who to call
- have an emergency kit for you and your animals.

Here is a useful checklist developed by NSW Department of Primary Industries that you could use as a starting point for your preparation:

- prepare to have access to alternate power supply eg. fuel generator
- prepare for adequate feed and water supplies for 3 -7 days
- have an animal evacuation kit
- identify and prepare a safe area
- access to adequate transport
- consider agisted animals
- practice your plan
- ensure adequate levels of insurance for your home, infrastructure, assets, stock and crops.

Food Supplies

It is important in emergencies to plan ahead. Where possible prepare by having food on hand that doesn't need refrigeration or heating. Foods with a long shelf

life such as long life milk, bottled water and canned goods should be part of an emergency food supply.

In areas that could be affected by a flood, plan to store food well above floodwater levels. Have eskies with ice bricks or gel packs to keep food cold if the power will be out.

Have drinking-quality water, detergent, chlorine bleach and alcohol-based hand sanitiser for cleaning.

After a Flood

Flooding events are not uncommon in our region. Floodwater can be contaminated with sewage, agricultural and industrial waste, and other substances that can cause illness. There is a danger that any food, surfaces and cooking utensils that have come into contact with floodwater might be contaminated. Spills and sewage discharges can also contaminate water supplies and food gardens. After a flood, throw out food that might not be safe to eat.

Water for Drinking

In an emergency such as a flood or contamination event, tap water and private water supplies such as from tanks, wells and bores might not be safe to drink and use for cooking and cleaning. Monitor public announcements and those from the local water supplier to know if tap water is safe to use. Private water supplies should be tested before using again.

Fire

Not only does bushfire pose a risk to personal safety and property, it can also have major impacts on biodiversity and water quality.

Cool burning at appropriate times can be beneficial for native plants and animals, however effective bushfire management involves fire authorities, landowners, land managers and planning authorities, Council and the local community. The work you do to prepare your own property is a critical component of bushfire management.



Severe storms can cause flash flooding and occur with little warning.

Bushfire management involves a risk planning process. You will need to:

- understand your bushfire zoning and risk – talk to Council planning staff
- identify the location of bushfire hazards (such as high fuel loads)

As well as consulting publications from the Rural Fire Service, you may also consider joining the local Rural Fire Brigade.

While most older farmhouses are built on cleared farmland there has been an increasing tendency to build on bush blocks. Probably the most important issue for a house on a bush block is to create an asset protection zone that breaks the continuous canopy of trees. This may probably mean removing some trees and reducing fuel loads of dry undergrowth and dead branches. This should be done with guidance from the local Rural Fire Service and Council.

Since 2002, legal standards have been in place for the safe construction of buildings in bushfire prone areas of NSW.

The standards include:

- adequate setbacks from bushland
- inclusion of reduced fuel areas (asset protection zones)
- correct placement

- good access roads for fire fighters and residents.

Strategically planned asset protection zones and regular maintenance to remove fuel greatly enhances the ability of your home to be protected in an emergency.

Wherever possible, new houses and sheds should be located in existing cleared areas to reduce the amount of clearing required for construction.

If you have stock, you can use them to manage pasture near your home during late spring and early summer to reduce fuel levels. Check with the Rural Fire Service.

All land clearance in NSW that is for bushfire hazard reduction and not agricultural purpose will usually require a Bushfire Hazard Reduction Certificate.

This certificate is for activities such as burning, land clearing and slashing. The Rural Fire Service and Council will also need to be notified.

The NSW Rural Fire Service website offer suggestions for fire protection measures around your home:

- clear leaf litter from gutters and install fire-rated gutter guards
- firmly fix the roofing so there is less chance for hot embers to enter roof space
- install screens or shutters and enclose areas under the floor, if possible



In times of bushfire local beekeepers work with the Rural Fire Service.

- ensure vents into the roof space are screened with fine wire mesh
- remove all flammable items from around the house (eg. the wood pile and obvious flammable materials such as paper, boxes, crates, hanging baskets and wooden garden furniture)
- direct the relief valves on LPG tanks away from the house
- buy a portable pump to use water from dams and swimming pools
- fit a gate valve to water tanks – a 38-millimetre Storz coupling will assist the Rural Fire Service
- consider reserving water supplies from tanks, dams or swimming pools as mains water will be in high demand during bushfire
- you may need to install a dedicated fire fighting tank
- have a bushfire action plan and make sure you know it.

Where to Find More Information

Byron Shire Council:

Byron Shire emergency dashboard –
www.emergency.byron.nsw.gov.au

Climate change mitigation and adaptation –
www.byron.nsw.gov.au/Services/Environment/Climate-change

Flood preparation –
www.byron.nsw.gov.au/Services/Building-development/Plans-maps-and-guidelines/Flood-planning

NSW Rural Fire Service: www.rfs.nsw.gov.au

NSW Department of Primary Industries:
www.dpi.nsw.gov.au

Planning for an emergency –
www.dpi.nsw.gov.au/climate-and-emergencies/emergency/community/before-an-emergency

Livestock safety in an emergency –
www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/708088/Livestock-safety-in-disasters.pdf

Horse safety in an emergency –
www.dpi.nsw.gov.au/__data/assets/pdf_file/0003/655581/Horse-safety-in-disasters.pdf

NSW Government, Food Authority:
www.foodauthority.nsw.gov.au/consumer/keeping-food-safe/flood-fire-power-cut-emergencies

Local Story

Tyagarah Apiaries

Beekeeping in Good Times and Bad

Background

Michael Howes and Kat Evans have been beekeeping in the region for about thirty years. Michael has a background as a Botanist and has always been interested in keeping bees in his backyard since he was a young lad. The couple moved to the region in the early 90s and rented an old farm house in the Byron shire. Michael noticed there were old bee boxes in the farm shed and asked the owner if he could fix them, which he did and resurrected them to capture bees. From one box it quickly grew to two, then four, then twenty boxes. They went from having too much honey to give away to friends and family, to starting to sell it and gradually their business grew. They soon moved to rented commercial premises and Tyagarah Apiaries was born.

What's Involved with Commercial Beekeeping?

Michael says there is a lot to manage with commercial beekeeping. For starters, it requires access to a lot of land and the goodwill and generosity of local farmers and landowners to allow you to have your bees on their property. He says you need about 400 hives to make it a commercially viable business. In particular, springtime can be very intensive and requires total dedication.

Tyagarah Apiaries have their hives placed in a number of carefully selected sites on local farms and near nature reserves throughout the region. They work with local macadamia farms where there is a clear mutual benefit – the bees seek the nectar from the macadamia flowers and they build their hives and the farmers get increased pollination and production from having bees on their farm. “The relationship with the farmers is important – we work with bee friendly farmers who understand the value to their farm and the seasonality of honey production”.

Kat and Michael's business principles and ethos are clear – they believe in a deep and intrinsic connection to nature that supports and promotes health and wellbeing. All their bees are managed naturally using organic standards. They do not use sugar feeding, antibiotics or veterinary pharmaceuticals. They use cold extraction methods and minimal processing to preserve the many beneficial compounds and enzymes found naturally in honey. Whilst honey operations use a lot of energy, their factory is off the grid and totally run by solar power.

Like most sustainable farmers in the region, Kat and Michael work closely with nature, they care for the land and the bees. They are aware of the cycles of nature, of when certain trees are flowering and move the bees to gather the nectar.

Beekeeping and Changing Climates

Michael and Kat say that over the last ten years the changing weather patterns have made it harder for the bees to get the nectar they need. In particular 2019-2020 was tough for Michael and Kat with ongoing drought and then bushfires surrounding the region. During these times their costs were high because they had to move the hives around to find water and their income was greatly reduced as much less honey was produced due to the dryer conditions. All up in 2019-2020 they estimate they lost approximately 75%-80% of their normal honey production for the year due to drought and fire.

“With drought years, there is less groundwater around which impacts the flowering and therefore the activity of the bees. The nectar flow isn't as good because the trees preserve the precious water rather than put it into nectar production”.

They say that in particular, the fire season was extremely stressful – “With the latest round of bushfires, we were alerted when there was fire in the vicinity of our bee sites and where we could, we had to work hard to quickly remove the hives”. They say they could not have done this without the support of the local Rural Fire Service (RFS). They listened to the RFS and followed their instructions – if it was safe to go in and remove their hives they did. All up they lost fifteen hives from the fires and say they were very lucky – some beekeepers lost up to 700 hives during the fire season. Sadly they also lost a lot of forests that the bees need to survive.

“The biggest challenge we face is the environmental break-down that is happening. Increasing droughts, fires, cyclones, floods, sea level rise and loss of habitat. The bees are like the canaries in the mines and the bees are suffering because the environment is breaking down.”

But they are finding ways of overcoming such obstacles – they are always seeking new sites for their bees and talking to farmers about putting hives on suitable land. They study the weather maps and follow the rainfall. Where there is rainfall, there will be plants producing nectar and food for bees.



There's more to beekeeping than meets the eye particularly when tackling drought and bush fires.

First-hand Insights

Michael has some advice for people interested in beekeeping for a living. "It's a very rewarding business to be involved in as you're outdoors in nature, in the forests a lot of the time, but you need to be prepared for hard physical work in the hot sun, lifting heavy boxes and being stung by bees. Beekeeping will keep you fit and healthy. You also need a keen understanding of botany and local flora. You need to understand good hive management and how to deal with diseases of bees. You need to be really passionate about bees and beekeeping and you have to be committed to studying and learning about it."

He says for those who want to start out there are courses for beekeeping and recommends in the first instance joining an amateur beekeeping club such as the Northern Rivers Amateur Beekeepers Association. They advise that if you have bee hives you have to register as a beekeeper with the NSW Department of Primary Industry. Michael and Kat also say they have benefited greatly by some of the local business courses and networks available in the region such as Sourdough Business Pathways and Build, Grow, Run Entrepreneurship Facilitators in Byron.

Checklist Dos and Don'ts

- Do** get involved if you have a passion for beekeeping and love hard work
- Do** research the local flora, hive management and how to deal with bee diseases.
- Do** seek the advice of local business networks in the region
- Don't** get too many beehives to start with.
- Don't** go it on your own – seek the advice from local beekeeper associations
- Don't** underestimate how much time and energy you need to be a commercial beekeeper

Where to Find More Information

Northern Rivers Amateur Beekeepers Association: www.beekeepers.asn.au/northern-rivers

Sourdough Business Pathways: www.sbp.org.au

Build, Grow, Run: www.business.gov.au/Expertise-and-Advice/Build-Grow-Run



Chapter 11

Farmer Health and Safety

Agriculture is one of the most dangerous industries to work in due to the combination of hazards involved. These include plant, chemicals, noise, dust, sun exposure, working with animals as well as the fact many in the industry work alone or in remote locations.

Farm Safety

Rural properties can be dangerous places to live and work. Potential hazards include vehicles, tractors and attachments, motorcycles and all-terrain vehicles, working from heights and the potential for manual handling injuries.

Farm Safety Statistics

SafeWork Australia report that agriculture is one of the most dangerous industries to work in due to the combination of hazards involved in agricultural work.

They report that between 2010 and 2014 more than one in five workers who died at work worked in agriculture. It has the highest fatality rate of any Australian industry (14.8 fatalities per 100,000 workers). Agricultural vehicles, for example tractors and quad bikes, accounted for 82 out of 221 (37%) worker deaths.

SafeWork Australia report the following agricultural safety statistics:

- the sector has the highest proportion of self-employed workers (46%) of any industry
- there are many hazards on farms that are less common in other workplaces, such as:
 - › augers, tractors, motorbikes and quad bikes
 - › chemicals—pesticides, herbicides, fertilizers
 - › animals
 - › extreme weather conditions
- farm workers often work alone:
 - › lifting heavy loads or operating machinery by themselves
 - › have fewer opportunities for sharing practices, observing and learning from others
 - › help or first aid isn't always nearby if an incident occurs
 - › farms may be remote, without mobile phone coverage
- agricultural vehicles account for over 75% of workplace deaths and are often caused by:
 - › tractors
 - › aircraft
 - › quad bikes

- other common causes of agricultural worker fatalities include:
 - › being struck by an animal (usually cattle)
 - › falling from a horse
 - › accidental shooting

Injuries to part-time farmers are a particular concern as often these people do not have the skills or equipment of full-time farmers and can be injured as a result.



There are many hazards on farms for adults and children.

Is Your Farm Safe for Kids?

Farms are great places for kids but safety for children on farms is a major concern. Children are particularly at risk on farms because of easy access to water/dams and vehicles, including motorbikes and tractors.

Farmsafe Australia report that around 20 children under 15 years are fatally injured on an Australian farm every year and many more are hospitalised or treated by General Practitioners across rural Australia. The major causes of child deaths and injuries on farms are dams, farm vehicles, machinery, motorcycles and horses. Age and development characteristics also place children at greater risk.

Farmer Health and Safety

The main agents of fatality and serious injury for children on farms include:

- drowning in dams (mostly under five year olds). Drowning accounts for around 35-40% on child farm deaths, with farm dams being by far the most common site
- quad bikes
- farm vehicles (cars, utes)
- around 25% of all child deaths were visitors to the farm, but for quad bikes, around 50% are visitors.

A common scenario is that a toddler wanders away from the home unnoticed into farm water or toward other farm hazards (vehicles, mobile machinery). Apart from dams, children can find their way into creeks, troughs, dips and irrigation channels. Children under five years of age are at greatest risk.

You need to identify hazards and risks specific to the farm for children as well as visitors.

As well as safety behaviours, you should reduce hazards and design for safety wherever possible. Key recommendations for child safety on farms include:

- create a securely fenced house yard for children to play
- have safety rules that everyone knows and follows
- children should stay in the safe play area unless an adult can closely supervise them on the farm
- wear seatbelts and restraints when in cars, utes and trucks
- children should not ride on tractors, all-terrain vehicles or in the back of utes
- always wear helmets when riding bikes and horses.

Preventing Rural Injuries

Just like any work environment, there are legal requirements on a farm under the Workplace Health and Safety Act 2000 to ensure a safe workplace.

Be aware that ordinary house and contents insurance does not cover public liability or workers compensation which is compulsory if you employ anyone to work on a property.

Some of the tips from the *WorkSafe Farm Safety – Starter Guide* include:

- map the hazards on your property. This involves drawing an outline of your property and mapping features. You can use the map as an induction tool for new employees and casual workers or contractors who come to the property.
- identify the dangers on your property eg.:
 - › identify possible hazards, especially for children
 - › assess the risks
 - › control the risks – remove the hazard or control it
 - › review your risk assessment on a regular basis.

It is important that all workers and all family members are included in the process.

Mental Health

Living off the land can be an ideal lifestyle however for some it can also have a negative impact on mental health. Mental health statistics for the farming community are a concern with male farm owners and managers dying from suicide at around twice the rate of the national average of other males. Farming has a unique set of pressures, with farmers being more likely to suffer from depression caused by financial pressures and isolation.

Signs of depression include:

- low self esteem
- low motivation or energy
- insomnia – difficulty sleeping and feeling tired
- difficulty concentrating or keeping focus
- inability to control your emotions – such as sadness or anger
- loss of enjoyment in socialising and doing things that previously made you happy
- changes in appetite and weight or decreased libido.

There are some things you can do if you suspect that you may be depressed:

- talk to your family or friends and tell them how you feel
- speak to your doctor or a trusted medical professional
- seek information and support online
- if you feel suicidal, seek help immediately.

Speak to your doctor, friends or family, or call one of the 24 hour helplines:

Beyond Blue 24 hour helpline: 1300 224 636

Lifeline: 13 11 14

Mental health line: 1800 011 511

Mensline Australia: 1300 789 978

Kids helpline: 1800 551 800



Mental health statistics for the farming community are a concern.



Be particularly careful on rural roads in storm season as road conditions may change without warning.

Safety on Rural Roads

Road condition

Road surfaces in rural areas are often less predictable than highways and city streets. Be alert at all times as the road surface may change without warning, sharp corners may not always be sign-posted, and the crests of hills may reduce visibility. Always be on the look-out for stock and native animals.

Drivers need to use different skills on gravel and unsealed roads. Dust can reduce visibility and it takes longer to stop when braking.

Livestock on roads

Where there are unfenced roads stock will be present on roads as they graze across these paddocks with a higher likelihood of being on roads if water sources are in close proximity to the road. These unfenced areas must be signposted.

It is also legal for livestock to walk along and graze on roadside vegetation within fenced roads with a permit, which can be obtained from Local Land Services, provided they are not left unattended and the stretch of road where they are grazing is sign-posted at each end.

All rural landowners who own even just a few livestock must ensure that their roadside fences are kept in good condition.

Domestic livestock are not allowed to roam unattended. Straying stock on public roads may be dealt with by council.

Roadside vegetation and wildlife

There are many large trees located close to rural roads, which are easily hit when drivers lose control of their vehicle. Remember to slow down and drive to the conditions – the speed limit is the maximum and NOT a must.

Native vegetation adjacent to many rural roads often acts as a wildlife habitat and refuge. This can be a problem for drivers from dusk to dawn when native animals, such as kangaroos, are out looking for food.

Remember to always wear a seatbelt and a helmet no matter how far you are driving or riding.

Where to Find More Information

SafeWork Australia:

www.safeworkaustralia.gov.au/agriculture

Farmsafe NSW: www.farmsafe.org.au

Farm Table:

www.farmtable.com.au/build/farm-safety-resources

The University of Sydney, AgHealth Australia:

www.aghealth.sydney.edu.au/resources/resources-for-farmers

WIRES: www.wires.org.au

NSW Local Land Services Rural living handbook, a guide for small landholders, 2020: www.lls.nsw.gov.au/__data/assets/pdf_file/0007/1147804/Rural-Living-Handbook-2020.pdf



Chapter 12

Labour on Farms

The Byron region attracts a number of overseas visitors and some of these visitors are interested in working on farms for experience. Several programs are set up that help connect farmers and volunteers such as Willing Workers on Organic Farms and others.

Willing Workers on Organic Farms (WWOOF)

WWOOF is a worldwide movement linking volunteers (usually from overseas) with organic farmers and growers to promote cultural and educational experiences based on trust and non-monetary exchanges, helping to build a sustainable global community.

It is a popular program for this region where a number of overseas visitors are interested in gaining experience and knowledge by working on an organic farm.

The WWOOF program asks that volunteers help for a maximum of 38 hours in any 7 days, 4-6 hours per day. The schedule is usually arranged between the volunteer and the farmers who are the host.

According to the WWOOF program, hosts must:

- grow or produce organic products, but not necessarily be 'Certified Organic'
- provide experiences to WWOOFers in sustainable land care: organic, bio-dynamic or permaculture techniques
- provide all food and clean comfortable accommodation to WWOOFers in exchange for 4 to 6 hours maximum of volunteering daily (maximum 38 hours in 7 days)
- be an 'Ambassador for Australia' and provide a safe haven for WWOOFers
- treat WWOOFers with respect and consideration.

Work Away Australia

Another option for volunteer workers to work on local farms is Workaway. Workaway has many people who have signed up to their database, looking to share their skills and experience in return for a place to stay. Hosts on Workaway are encouraged to provide a welcoming friendly environment for visitors as well as offering accommodation and food.

Hosts running a business (or asking for help with a business activity) should provide accommodation and pay at least the minimum wage in their country for all hours worked. The help offered is generally for around 5 hours per day, 5 days a week. This can be anything which is within reach of a willing visitor.



WWOOF program links volunteers with organic farms.

Some typical examples of fun and worthwhile exchanges have been creating eco gardens, boat sitting, house sitting, babysitting, doing the school run, pet sitting, helping to construct natural earth houses, sharing in family cooking, giving a hand with general maintenance, teaching and practising languages.

Heads Up About Visas

There is often an abundance of willing workers for farms in our region through programs listed above, however it is important to be aware of rules and regulations regarding working visas. These change from time to time and we recommend before you encourage overseas visitors to your farm to work, to check with the Australian Government regarding working visa requirements.

Where to Find More Information

Willing Workers on Organic Farms:

www.woof.com.au

Work Away Australia: www.workaway.info

Australian Government, Home Affairs

Department, information on working visas:

www.immi.homeaffairs.gov.au/visas/working-in-australia

Australian Government Jobsearch for fruit and vegetable harvesting work:

www.jobsearch.gov.au/harvest

Local Story

Hayter's Hill Farm

Pioneering Farming Family with a Passion for Regeneration

Photo © Anne Briggs



Julie and Owen Trevor-Jones with very helpful 'Wwoofers' in the peak of their harvest season.

A History of Farming

The Trevor-Jones family have been farming in the Byron Shire since 1881. That was the era of dairy farming in the region and the family continued to be part of the dairy industry until 1966 when changes in the industry made it difficult to continue. They moved to beef cattle farming which they have continued to be involved in as a family to this day.

Three generations of the Trevor-Jones family now live on the Hayters Hill Farm in the Byron hinterland. Parents Julie and Owen, and sons Dave and Hugh work the family property, 350 acres of beautiful farmland overlooking Byron Bay. Meat is butchered by Dave and sold directly to the public through farmers' markets which maximises the economic sustainability of the farm. In recent years Hugh has moved his free range chickens to a separate block of the family farm and Julie and Owen have diversified with additional farming investments including a pecan orchard in the hinterland.

Farmers' Markets – Selling Directly to Consumers

As the farmers' markets in the region have grown in popularity, so too has their business famous for premium products, and they sell directly to a group of loyal consumers. They also sell their prized beef, poultry and pork products to local restaurants and cafés in the region. Over the years they have diversified with a range of farm fresh products and include beef, chickens, eggs, pork, and flowers. However meat and poultry have always been their biggest sellers!

Happy, Healthy Animals

The family spend a lot of time and effort making sure that their animals are happy, healthy and well cared for. They have around 150 Hereford Brahman cross cattle on their farm which are moved daily between 30 paddocks. They do this to limit the internal parasites and ticks and it keeps pastures healthy. They use organic fertilisers, compost and lime to help improve the soil and dung beetles have been trialled to help limit the need for chemical control of buffalo fly.

They also have healthy pigs which live their entire life outdoors, with shade and shelter provided, and are moved to a new paddock each week. They won't return to the same paddock for six weeks, which breaks any parasite cycle and keeps the pigs healthy and disease free.

Caring for the Land

The family have pride in their healthy pastures which provide plenty of feed even through the drier winter and spring months and our most recent drought years. Julie, Owen, Dave and Hugh are all passionate about supporting the land and believe in the benefits of rotational grazing. Over the years they have regenerated large sections of the property to restore habitat and minimise soil erosion and degradation.

"The long term health and diversity of the land is essential so for the last 30 years the family have been heavily involved in Landcare and regenerative farming, especially in sensitive areas such as along the riverbanks", said Julie.

Checklist Dos and Don'ts

- Do** move with the times – markets change and you need to change to consumer's tastes
- Do** diversify product
- Do** take care of your land – consider regeneration practices which help conserve the land and minimise degradation.
- Don't** put all your eggs in one basket – markets change and diversifying your products is a good long term strategy
- Don't** underestimate the importance of reputation – quality products will always win over quantity

Where to Find More Information

Byron and Bangalow Farmers' Markets:
www.byronfarmersmarket.com.au

References and Resources

Publications:

Australian Bureau of Statistics: *2019b Value of Agricultural Commodities Produced Australia, 2017-2018*

Australian Pesticides and Veterinary Medicines Authority (APVMA): *Understanding Pesticide Chemical Labels*

Brunswick Valley Landcare Inc.: *Grazing on Small Farms in Byron Shire, 2015*

Byron Shire Council:

- *Farmers Farm and Cows Do Moo* brochure, 2020
- *Towards Zero – Byron Shire’s Integrated Waste and Resource Recovery Strategy 2019-2029*, Byron Shire Council, 2020.
- *Byron Region Food – A Northern Rivers Food and Beverage Handbook*, 2018
- *Byron Shire Rural Land Use Strategy*, 2017
- *Rural Land Use Discussion Paper*, 2015
- *A Fresh Approach, Rural Land Use Discussion Paper*, date unknown

Byron Shire Council, Fact Sheets:

- *Getting to know policy affecting our rural areas*, fact sheet E2016 /83142
- *Easy steps to a property plan*, fact sheet E2016/88940

Coast Adapt NSW: *Climate change impacts on coastal agriculture*, Allyson Williams, Impact Sheet 11, date unknown

NSW Local Land Services:

- *Rural Living Handbook, A guide for rural landholders*, 2020 and earlier version (date unknown)
- *North Coast Regional Strategic Weed Management 2017-2022*, 2017

NSW Government Office of Environment and Heritage, Adapt NSW:

- *North Coast Enabling Regional Adaptation, North Coast Region Report*, 2019
- *North Coast Climate Change Snapshot*, 2014

Rous County Council:

- *Buyers Beware, Advice on weeds for intending property purchasers*, 2017
- *The Landholder’s Guide to Looking After Waterways in the Richmond Catchment*, 2017

Websites:

ABARES (Australian Bureau of Agricultural and Resource Economics and Sciences):
www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-richmond-tweed#agricultural-sector

Adapt NSW: www.climatechange.environment.nsw.gov.au

Australian Government Department of Home Affairs, Working in Australia:
www.immi.homeaffairs.gov.au/visas/working-in-australia

Australian Government, ABLIS: www.ablis.business.gov.au

Australian Macadamia Society:
www.australianmacadamias.org/industry

Australian Pecan Association: www.pecangrowers.org.au

Australian Sub-tropical Coffee Association:
www.astca.org

Brunswick Valley Historical Society:
www.mullumbimbymuseum.org.au

Byron Bay Historical Society:
www.byronbayhistoricalsociety.org.au

Byron Shire Council: www.byron.nsw.gov.au

Bundjalung of Byron Bay (Arakwal):
www.arakwal.com.au

Chemclear: www.chemclear.org.au

drumMUSTER: www.drumMUSTER.com.au

Farm Table:
www.farmtable.com.au/build/farm-safety-resources

Friends of the Koala: www.friendsofthekoala.org

North Coast Local Land Services:
www.lls.nsw.gov.au/regions/north-coast

Northern Rivers Amateur Bee Keepers Association:
www.beekeepers.asn.au/northern-rivers

Northern Rivers Food: www.northernriversfood.org

NSW Department of Primary Industries:
www.dpi.nsw.gov.au/agriculture

NSW EPA: www.epa.nsw.gov.au

NSW Government, Biodiversity Conservation Trust, Conservation Management Program:
www.bct.nsw.gov.au/conservation-management-program

NSW Water: www.industry.nsw.gov.au/water

NSW Office of Environment and Heritage:
www.environment.nsw.gov.au

NSW Government, NSW Rural Fire Service:
www.rfs.nsw.gov.au

NSW Government, Food Authority, Flood, fire, power cut emergencies: www.foodauthority.nsw.gov.au/consumer/keeping-food-safe/flood-fire-power-cut-emergencies

RDA Northern Rivers: www.rdanorthernrivers.org.au

SafeWork NSW: www.safework.nsw.gov.au

The University of Sydney, AgHealth Australia:
www.aghealth.sydney.edu.au/resources/resources-for-farmers

Weeds Australia: www.weeds.org.au

Wildlife Friendly Fencing:
www.wildlifefriendlyfencing.com

Willing Workers on Organic Farms Australia:
www.woof.com.au

WIRES: www.wires.org.au

Work Away Australia:
www.workaway.info/en/hostlist/oceania/au

Appendix: History of European Agriculture in the Byron Region

Dixson Galleries, State Library of New South Wales



Mt Warning, 1897.

23 Million years ago

- Eruption of an ancient volcano, Wollumbin protruded from the landscape and the rich volcanic soil eventually led to the creation of the “Big Scrub”, dense sub-tropical rainforest.

Circa 60,000 years ago

- The lands bordering the Logan River and Allora in Queensland in the north, to the mouth of the Clarence River at Iluka in the South and inland to the ranges east of Tenterfield are traditionally known as Bundjalung Country.
- Before the European’s colonised Australia in 1788, many people lived in this rich and beautiful place as their ancestors had done for more than 60,000 years.
- In those times, *Bundjalung* people shared a distinctive pattern of life – seasonal food gathering from the rainforest to the sea, the use of regional bush medicines, cycles of ceremonial events and belief in an ancient and strict customary Law. For all *Bundjalung* clans, the spiritual power of the *budheram* (*budjeram*), the sacred dimension of all life, was universally respected and its secrets protected.

1770

Start of European history in Byron Shire

- Captain Cook named Cape Byron during H.M.S. Endeavour’s voyage to the Pacific – to observe the transit of the planet Venus across the face of the sun.

Circa 1840

Clearing of The Big Scrub begins

- The first settlers at Ballina on the Richmond River came from the Clarence River in the schooner Sally, in 1842. Around this time it was documented that



Byron Bay Historical Society

Cedar-getters.

cedar cutting was occurring on the Brunswick River around May 1849.

1860’s

Free Selection and the Growth of Agriculture

- When the Crown Lands Alienation Act 1861 came into operation at the beginning of 1862, the land in the coastal districts was most sought after for farming as it was near navigable water.
- By 1869, when the Governor of New South Wales, Lord Belmore, visited the Richmond, there had been 60,000 acres free-selected on the river, upon which were 600 selectors, most of whom kept to the navigable part of the river, where they could ‘find the means of easy transit for their produce’. The banks of the river were then:
“clothed with dense foliage, broken here and there by small clearings, upon which appeared withered maize stalks, looking rather dismal among the fallen timber, tons of pump-kins, a few fruit trees, and the usual primitive buildings which are to be seen about new settlements.”
- Maize was the first ‘staple’ crop, thriving on the narrow strips of fertile soil which flanked the navigable reaches of the rivers.
- Sugar soon superseded maize as the most important crop on both the Richmond and Tweed Rivers, as it had earlier done on the Clarence.
- By 1868 there were nine sugar mills in northern New South Wales and these produced a total output of about 60 tons.



Brunswick Valley Historical Society Inc.

Sugar cane cutters at Tyagarah. A sugar cane mill was established at Byron Bay by Edward Atkins.

1880's

- European settlement in the region continues with first settlers given large land parcels in the "Big Scrub", free of charge or for a small fee to clear the dense vegetation and begin farming.
- The Big Scrub is cleared and farming of maize, sugarcane, corn and cattle begins to develop.
- Sugar mills were erected in Ewingsdale and at Nashua.

1887

- Sugar growing on the elevated Big Scrub land was not a success, through the combined effects of frost, falling sugar prices during the 1880s, and the inefficiency of small mills.
- Dairying begins in the region and the first pure bred Jersey cattle are imported. A milk separating factory was built at Newrybar and milk from farms transported to the factory to be separated.
- In the Brunswick Valley as a whole, dairying became the leading industry, far exceeding sugar cane growing in importance.

1888

- A jetty is constructed in Byron Bay to facilitate the transportation of agricultural commodities and timber, alongside the establishment of a steam ship company to transport the goods from Byron to Sydney.

Early 1890's

- Bananas, mangoes and pineapples introduced to the area and Bangalow Agricultural Society founded.
- The introduction and rapid expansion of dairying, however, caused a revolution which transformed the landscape of the Big Scrub profoundly and irrevocably during and after the 1890s.

1894

- Train line between Lismore and Mullumbimby opened for traffic on 14th May, and to Murwillumbah on 24th December.

1895

- The North Coast Fresh Food and Cold Storage Co-operative Company Ltd (NORCO) began operations at Byron Bay (NSW).



Byron Bay Historical Society

Byron Bay port and jetty.

Appendix: History of European Agriculture in the Byron Region

Byron Bay Historical Society



NORCO's butter factory, Byron Bay.



Broad scale production of paspalum seed.

Brunswick Valley Historical Society Inc.

1896

- NORCO bacon curing operations began at Byron Bay.
- Coffee was introduced which thrived on frost free sandy slopes.
- Custard apples and paw paws also proved successful but marketing was difficult (the fruit did not travel well).
- 28 August 1896 Byron Bay was officially declared a town even though the first allotments were offered for sale in July 1886. Very few homes were built until completion of the railway in 1894 and the town became viable.
- With the influx of farmers, settlers and merchants following the development of the port and jetty, the opening of the railway and the NORCO butter factory, the town's population grew rapidly.

1900's

- Potential of Hindu farm labour realised and immigration from India began to take place.
- Butter was the most valuable commodity exported from Byron Bay (72% of total value of exports), and, with the exception of timber (around 5,000 tons), made up the greatest tonnage (884 tons).

1904

- The original NORCO company was voluntarily liquidated and sold to a new company called the North Coast Co-operative Limited.

1910

- Early selectors begin broad scale production of paspalum seed.
- In the interest of pasture improvement, conventional agricultural practices such as ploughing were trialled and implemented.

1912

- The Binna Burra butter factory was erected. It became the focus of the economy of the Binna Burra, Bangalow and Newrybar area.

1913

- Farmers began producing more than local butchers could absorb and surplus livestock was sent to Sydney for slaughter. At the time, it was much more profitable to use pasture for dairying, so bull calves and old cows were a liability.
- After many meetings and discussions, it was agreed that the best way of dealing with all this surplus stock from the district would be to establish a factory at Byron Bay for freezing and canning the meat.
- The Byron Bay Co-op. Canning and Freezing Co. Ltd selected Byron Bay over several other sites, partly because of its port facilities, and proceeded to erect its works on the town side of Belongil Creek, next to the railway line.
- The meatworks commenced operation in August 1913.

1916

- Dynamite used to clear fields and plant banana tubers, increasing productivity.

Brunswick Valley Historical Society Inc.



Small crop potato farming.



The Byron Bay Meatworks began operating in 1913.

1918

- Bananas and pineapples remain significant crops alongside the strong dairy industry, with production increasing after WWI.

1920's

- By the early 1920s bananas had become one of the three most important exports from the Byron Bay jetty, along with butter and bacon.
- The rapid growth of the banana industry was curtailed by 'bunchy top' disease which was rife by the mid-1920s.
- The Byron Bay Co-op. Canning and Freezing Co. Ltd closed its Byron Bay meatworks.

1925

- On the 15th December 1925, the North Coast Co-operative Company officially altered its name to NORCO Co-operative Limited.

1928

- Construction of a new jetty in Byron Bay is completed, allowing for bigger ships and large scale export for the 8,000 farmers of the Richmond-Tweed district. A large fishing industry begins.
- Byron Bay Co-op goes into voluntary liquidation and sells its meatworks to NORCO.

1930's

- Development begins on road network infrastructure to support the transport of produce.
- NORCO leases the Byron Bay Meatworks to A.W. Anderson who resumed operation in June.

- 'Bunchy top' was eventually defeated and the banana industry experienced a revival. The Banana Growers' Co-operative Company (NSW) was formed to assist with the marketing of bananas.

1934: The Decline of Dairying

- Dairy production in the region continued to grow during the earliest decades of the twentieth century, reaching a peak in the early 1930s at which time the Region produced 60 per cent of the State's butter.
- North Coast dairy production declined progressively after 1934 with butter production falling from 34,800 tonnes in 1934 to 11,900 tonnes in 1969, and milk production falling from 709 million litres in 1934 to 497 million litres in 1971.
- The decline in production was accompanied, by a movement of local farmers out of dairying. This movement gathered momentum in the 1960s, and towards the end of that decade it was estimated that 50 per cent of dairy farmers in the region had left the industry during the previous ten years.





Bananas were an important export crop. Lance Mott with two large banana bunches (pictured).

1945

- After the Second World War bananas became a leading generator of economic prosperity in Byron Shire, compensating for the decline of dairying.

1947

- NORCO resolves to close the Binna Burra butter factory.

1950's

- Banana land became so valuable that even an experimental plantation of macadamia nuts, established in the 1920s at Palmwoods in the Brunswick valley, was destroyed in 1950 and replaced with bananas.
- In the early 1950s the Brunswick valley briefly became the greatest banana producing district in the country.
- Steam shipping from Byron to Sydney stops.

1954

- Cyclone destroys the new jetty and wipes out the fishing industry.
- Whaling industry begins in Byron Bay when A.W. Anderson and Co., owners of the meatworks, formed the Byron Bay Whaling Company.

1962

- Whaling ceases in Byron Bay.

1965

- Opening of markets in the United States of America for boneless beef necessitates the complete rebuilding of the Byron Bay Meatworks.



Whaling in Byron Bay ran from 1954 – 1962.

1967

- The Byron Bay meatworks was processing 800 cattle, 600 pigs, and 800 calves weekly, and employed more than 200 people. Economic difficulties that year forced Andersons into bankruptcy.

1968

- F.J. Walker takes over the Byron Bay Meatworks and continues to employ 140 to 200 people. Sales that year were largely export (44%), with the balance to Sydney (33%), to Newcastle (14%), or local (8%).

1970: Continued Decline of Dairying

- Further troubles for dairy farmers came in the early 1970s. On 1 July 1970, the Dairy Industry Authority was constituted to regulate the milk market over all of New South Wales.
- NORCO Ltd announced that its factories would not receive milk in cans after 30 June 1971. The introduction of bulk milk collection forced farmers to invest in new equipment and better roads and bridges for bulk milk tankers, or leave dairying.
- Dairy farmers responded by converting their dairies to beef production, which could be done without major investments. This was a short-term solution however as the beef market collapsed in the mid-1970s.
- Some dairy farms were converted to horticulture; others were sold or subdivided to provide rural residential blocks.



NORCO ceased making butter in Byron Bay in 1972.

1972

- NORCO closes its Byron Bay butter factory and transferred its headquarters to its Lismore factory; the last butter was made at Byron Bay on 31 March 1972.

1975

- NORCO's pig curing meatworks associated with their butter factory closes. Manufacture of NORCO's meat products is transferred to Casino.

1983

- Elders-IXL became a major shareholder in F. J. Walker Ltd, and in October closed the Byron Bay Meatworks. Production ceased on 28th October.

1985 – 1990

- After the closure of the meatworks and NORCO, cattle farming was becoming less viable in the shire and other industries started to take off including macadamias, fruits and vegetables.
- Strong competition from large blocks and good growing conditions in Queensland saw the demise of the banana industry in the Byron shire.
- By the late 1980s, dairying had become a relatively insignificant economic activity in Byron Shire. In 1987-1988 there were only 3,200 dairy cows in the Shire, compared to 38,000 in 1941.



Macadamia plantations.

Today

- There is growing pressure on rural land use as our agricultural land becomes more urbanised.
- Macadamia farms are the prevailing type of crop produced in the area.
- Regenerative, organic and small scale farms are again beginning to change how farming operates in the area.
- New industries are emerging such as Australian native foods and hemp in the region.
- Small scale farms in the region look to value-adding and agritourism for profitability.
- Over the past two decades there has been strong pressure to subdivide prime agricultural lands. This, combined with rising local land values, is making it increasingly difficult for new rural producers to afford quality land for crop production.

Where to Find More Information

Byron Bay Historical Society:

www.byronbayhistoricalsociety.org.au

Brunswick Valley Historical Society:

www.mullumbimbymuseum.org.au

NORCO: www.norcofoods.com.au/our-story

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Photo of Fridas Farm: © Kate Holmes Photography