

The 27th International Conference on Geoinformatics

Sydney Australia

July 1-3 & 4-7 (Field trips), 2019

FIELD TRIPS

Several optional field trips will be arranged on 4 – 7 July 2019 to expand your knowledge about policy, place and plan of Sydney, New South Wales and Australia. Visit sites and themes are particularly designed as part of the conference program showcasing Sydney/New South Wales’s environment management, planning policies and research capacity.

There are 3 optional routes for field trips, the local organiser reserves the rights to change the field trips based on the confirmed registration number for field trips.



**Please note field trips are set after the main Conference dates (1 – 3 July, 2019) and occur on 4 – 7 July 2019. If you are travelling from overseas please ensure you arrange your time and accommodation to allow you to attend the Field Trips

Route 1: Sydney and Surroundings

Please note this route consists daily field trips, please ensure you arrange your own accommodation in Sydney

The order of the day trips might be adjusted following participants needs

Coastal Management and Parklands Management – field trip beyond Beaches and Parks

Date: 4th July 2019

Time: 7:30am – 4pm

Price: \$200.00pp

In comparison with many countries of the world, Australia possesses an enormous continuous coastline. Including islands, Australia's coast stretches for about 60 000 kilometres and comprises over 10 000 separate beaches. About two-thirds of the population live in the towns and cities that have been built to take advantage of the many benefits the coastline brings. Coastal management refers to the use and protection of this vast area, which is made up of marine (saltwater) and estuarine (meeting point of fresh and saltwater) ecosystems. In a constant state of evolution, these areas are naturally affected by rainfall, wind, ocean currents, waves and tidal movements.

Key human impacts and resultant environmental issues

Our coastal zone houses great potential in terms of its use for commercial, recreational and settlement purposes. It also holds many social and cultural values for both Indigenous and non-Indigenous Australians alike. Sadly, human use and enjoyment of the coast over the past two centuries have greatly disrupted the processes which form its intricate ecosystems.

Human activities have also reduced the biodiversity of our coastlines, which helps them to maintain their health. Small organisms in coastal ecosystems are often the first link in large food chains. The impact of their population reduction or extinction inevitably reverberates throughout the entire chain. The most significant ways in which humans have impacted upon Australia's coastline will be showcased during the field trip.

The field trip will start beach walk at Watson Bay, head straight to the Gap, up to Christiansen Park past the lighthouses and on to the boardwalk following the coastline towards Bondi Beach. The Federation Cliff Walk (http://www.sydney.com/town/Dover_Heights/The_Federation_Cliff_Walk/info.aspx) is a coastal walkway project constructed to mark Australia's Centenary of Federation. The wooden platform (http://www.waverley.nsw.gov.au/things_to_do/local_walks/dover_heights_to_vaucluse_federation_cliff_walk) links a series of cliff-top reserves from the Eastern Reserve at Dover Heights to Diamond Bay at Vaucluse providing sublime views of the ocean waves exploding against the cliffs and is a perfect spot for whale watching. It's approximately 8km to Bondi with some trail and some residential walking. We'll be providing options for participants to choose either walking or touring by car, then gathering at Bondi for a snack, grab a coffee, refill water, take a swim if you feel inclined.

This short costal walk starting from is the ideal way to stretch your legs whilst taking in the majestic views of the harbour and the stunning cliffs overlooking the Pacific Ocean.



Bondi Beach



Clovelly Beach



Bronte



Coogee



Watsons Bay



Tamarama

While the Parklands may be mainly characterised as a cultural landscape developed over several generations, it nonetheless plays a significant role in the environmental health of Sydney, particularly as a filter for stormwater over a wider urban catchment and as a refuge for native fauna.

Centennial Parklands has a rich and complex history both as a made place, supporting a diversity of activities, representing the 19th century overlay of

British culture, and in the continuing evidence of underlying natural landforms and ecological processes that function, albeit in an interrupted or curtailed manner.

Afternoon the participants will meet parkland management experts, and discuss numerous challenges that the Centennial Parklands Trust must plan for in order to sustain these Parklands, including:

- continuing increases in surrounding population and population densities, with subsequent demand on the Parklands' facilities and environment zones
- intensifying urban development, particularly hard surfaces in the catchment, that increase urban runoff with polluted stormwater leading to pressures on the Parklands' ponds and aquifer
- loss of habitats in the region owing to urbanization, increasing the importance of the Parklands as an island refuge for native flora and fauna
- increasing car use affecting air quality in the locality
- absence of connected vegetation corridors in the locality leading to isolation of remnant habitat in the Parklands such as the Eastern Suburbs Banksia Scrub fragments, limiting native fauna movement and reducing opportunity for recharge of native seed banks from external sources.
- conducting its own maintenance operations in a way which doesn't degrade the environment In a broader context, greater unpredictability in climate, leading to increased frequency and severity of storms, droughts and floods also place the interrupted ecology of the Parklands under stress.

Pick-Up Points

7.30 – 8.30am	Hilton Sydney Hotel CBD pick-up service

Drop-Off Points

Mid-afternoon (4pm)	Drop-off at Hilton Sydney Hotel, or by arrangement
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Central Coast natural and cultural heritage-themed walk: Wagstaffe to Pretty Beach NSW Central Coast

Date: 5 July 2019

Time: 7:30am – 4pm

Price: \$200.00pp

This field trip will take you to the scenic Hawkesbury River region, north of Sydney the village of Wagstaffe, at the northern end of a Central Coast peninsula about an hour north of Sydney. The village only became accessible by vehicle from the mid-20th century when the Hawkesbury River was bridged and a road though the MacMasters Beach was improved. Prior to that time Wagstaffe was only accessible by water from Brooklyn, Ettalong or Woy Woy.

The isolation of Wagstaffe for much of the 20th century has created a unique settlement pattern that will be the focus of this excursion, along with the stunning setting and beaches of the Central Coast.

The trip involves about 3 hrs of slow walking as far as the school, with an option to extend the walk to Lobster Beach – add 1 hr. A decision can be taken with participants on the day on that option.





Pick-Up Points

7.30 – 8.30am	Hilton Sydney Hotel CBD pick-up service

Drop-Off Points

Mid-afternoon (4pm)	Drop-off at Hilton Sydney Hotel, or by arrangement
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Hunter Valley field trip

Date: 6th July 2019

Time: 7:30am – 4pm

Price: \$200.00pp

\\This conference trip arranges a visit to the Hunter Valley to visit dairy, goat, olive and wine-growing industries.

We will start with visited the Banfield Park Stud Farm which produces milk through careful animal husbandry. The conference participants were impressed by the farm owner, Alex Berry, a 25-year old who ventured into goat farming after the drought of 2007 cut water allocations to their Holstein dairy herd. The property supports 140 milking goats of six different breeds producing an astounding 3200 litres a week. The farm also exports live goats to Malaysia, Taiwan and Turkey and provides milk to produce the Binnorie Dairy soft cheeses.

Participants can note the dedication and time that farmers spent on the farm and the farming knowledge they have with no formal training in animal husbandry.

Participants will then visit the [Adina Olive Grove](#) (to be confirmed) — a family-owned 45-acre farm with five dams and a generator for power supply. The family grows thousands of olive trees ranging in age from 9 to 20 years old, harvested from April through June producing table olives, tapenades and olive oils for retail sale and distribution.

The participants will be taken through the olive processing machines by an industry expert, with a questions and answer session on alternative processing options.

The next stage of the field trip will take participants to Polkolbin, [First Creek Wines](#) (to be confirmed) where the Cellar Door Manager can detail the wine-making process and the intricacies of the different grapes and equipment used in the process. First Creek is owned by Liz Jackson and Greg Silkman and includes a 2500-tonne crushing capacity, 6000-pallet storage, two bottling lines processing 7000 bottles per hour and 1800 French and American oak barrels in storage. A short lesson was conducted on the art of wine-tasting!

Pick-Up Points

7.30 – 8.30am	Hilton Sydney Hotel CBD pick-up service
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Drop-Off Points

Mid-afternoon (4pm)	Drop-off at Hilton Sydney Hotel, or by arrangement
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Aboriginal Heritage Sites – Field Trip & Cruise

Date: 7 July 2019

Time: 7am – 4pm

Price: \$200.00pp

This field trip will explore and cruise pristine Ku-ring-gai Chase National Park wilderness and discover some of Sydney’s best kept secrets.

Ku-ring-gai Chase National Park is one of Australia’s most remarkable landscapes and the country’s second oldest National Park. Experience Sydney’s spectacular ‘out back’ – its northern National Parks and beaches, featuring insightful commentary, picturesque photo opportunities, cultural experiences and an opportunity to appreciate Aboriginal heritage and understand the true story of Colonial Australia’s first 50 years

The tour begins in the heart of Sydney’s iconic Ku-ring-gai Chase National Park, home to one of the world’s most concentrated collection of recorded Aboriginal Heritage Sites, and its remarkably peaceful waterways. It takes in the world-class lookout at West Head be guided by Sydney expert guides, who have a personal connection to this region and can share loads of stories about its ancient and modern history.

Pick-Up Points

7.30 – 8.30am

Hilton Sydney Hotel CBD pick-up service

Drop-Off Points

Mid-afternoon
(4pm)

Drop-off at Hilton Sydney Hotel, or by arrangement



Route 2: NSW towards Queensland field trip

Date: 4 -7 July 2019

Price: \$1,600pp (including motel accommodation)

Pick-Up Points

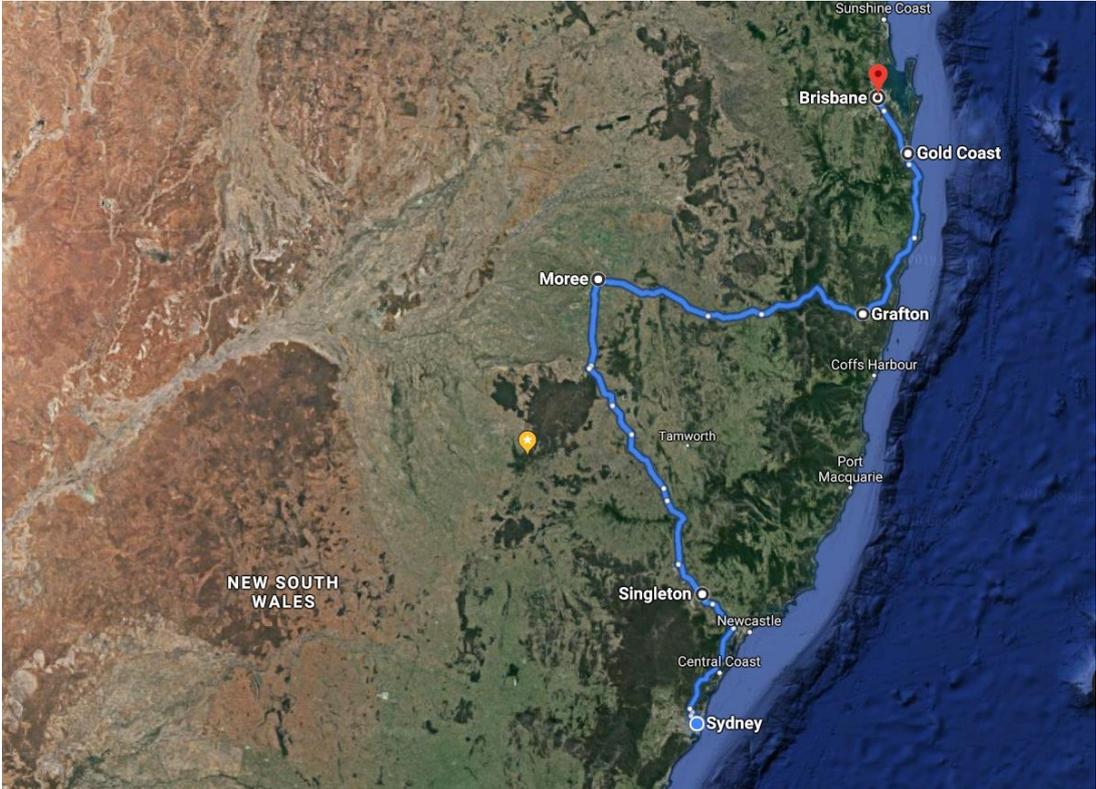
7.30 – 8.30am, 4 th July	Hilton Sydney Hotel CBD pick-up service
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Drop-Off Points

Mid-afternoon (4pm), 7 th July	Drop-off at Brisbane Airport or by arrangement
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The field trip is specifically designed to lift and amplify engagement with key regional themes. It creates a platform for delegates to engage directly with regional/political leaders, key industry representatives, government, research/education leaders and the community sector on the most important opportunities and challenges facing regions. The Field trip will showcase mixed NSW environment/planning policy vs infrastructure and regional development systems through visits to cities/centres, infrastructure hubs, farms and research facilities.

Participants in four days of the field trips will gain a firsthand understanding of NSW’s regional development, settlement history, urban and agriculture environment and research capability. Participants will explore the key policy ideas and considers for the future for our regions. The key regional themes will be presented for discussion to bring participants’ expert knowledge together to advance education, debate and policy insights.

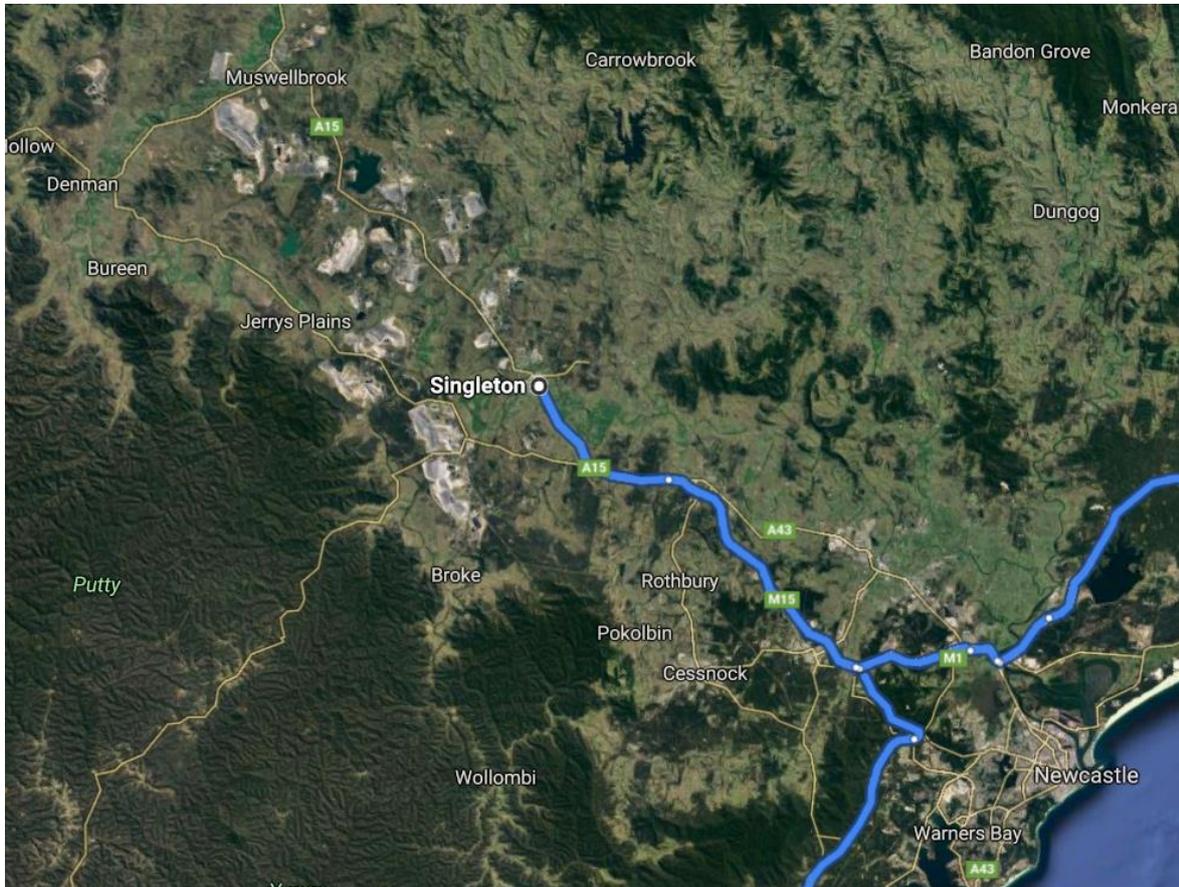


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Day 1: Newcastle / Singleton/

Key Themes: Hunter Strategy, Port, Coal Mine, Advanced Technology, Land Release

The trip will showcase mixed environment/planning/development systems through visits to port, farms/mining site, land release site and research facilities in the Newcastle and Singleton Valley.



Hunter region has a position of leading regional economy in Australia, with a vibrant metropolitan city at the heart and the regional characteristics:

- a leading regional economy in Australia
- a biodiversity-rich natural environment
- thriving communities
- greater housing choice and jobs.

The Hunter is home to more than 860,000 people with thriving communities and a biodiversity-rich natural environment, and is still growing due to its reputation as one of the great places to live and work.

Greater Newcastle is the centrepiece of the region, renowned as a connected metropolitan city where 95 per cent of residents live within 30 minutes of a strategic centre, including the new growth areas at Glendale and Broadmeadow.

Newcastle City Centre is the heart of Greater Newcastle and the capital of the region. The city centre has been transformed by capitalising on its active port, vibrant waterfront and heritage. It hosts more residents, students, businesses, researchers, educators and entrepreneurs than ever before.

A knowledge centre of excellence in health and education is providing world-class research into medical technologies, agricultural productivity, renewable energy and mining services.

A skilled science, technology and engineering workforce is engaged in advanced manufacturing and digital technologies.

Beyond Greater Newcastle are vibrant centres, towns and villages, many of which have benefited from emerging job opportunities in the health, agriculture, tourism, defence, energy and transport sectors. Faster inter-regional transport and digital technology are making it easier for residents and businesses to interact and do business.

The Port of Newcastle is a vital hub for exporting agricultural produce (including prized beef, lamb, dairy and oilseed) and coal to new markets throughout Asia. Productive agricultural land and natural resources are the foundations of the region's gross domestic product.

Day 2: Tamworth/Moree

Trip Area: the New England North West region

Key Themes: Landscape, rich soil and climate, important agriculture land, Nature based and cultural heritage tourism

Diverse landscapes, rich natural resources and strong communities make the New England North West a dynamic and prosperous region that capitalises on its past and is building for the future.

Growth in agriculture, agribusiness, livestock meat production, mineral resource development, renewable energy, health and education is providing jobs and supporting thriving local communities.

Primary production, intensive agriculture and food processing sectors take advantage of the rich soils and climate. National and international demand for energy is the impetus for the thriving renewable energy sector harnessing the high solar and wind potential.

Strategically located, with close links between some of Australia's fastest growing areas – South East Queensland, Newcastle and Sydney - is attracting industry investment. Upgrades to airports, the Newell, New England, Oxley, Gwydir and Kamilaroi Highways, and the development of the Melbourne-Brisbane Inland Rail and intermodal freight terminals are making it easier for goods, services and people to move across the region and beyond.

The National Broadband Network drives innovation, research and new industries that support traditional sectors to deliver an economically sustainable future. The University of New England remains at the forefront of technological change and opportunities to grow the region.

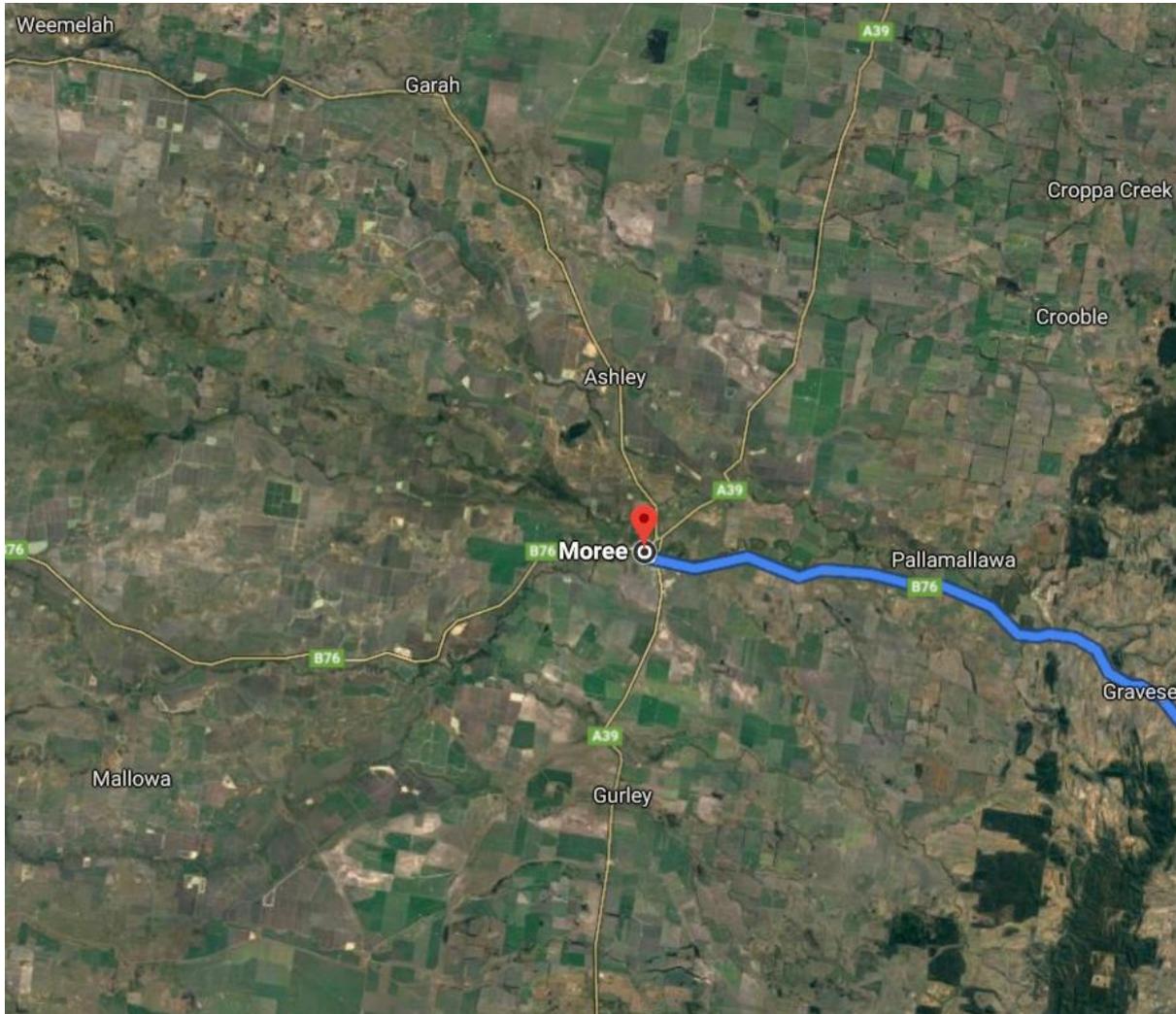
Important agricultural land, such as the Liverpool Plains, is protected and agricultural producers lead sustainable and water-efficient food and fibre production to meet demand from domestic and international markets.

Communities are well connected, attractive, healthy, safe and prosperous. They are places with a strong sense of community identity, resilience and respect for country. People access a range of employment opportunities, housing choices, vibrant events and festivals and high quality education, health, recreational and other community services.

Nature based and cultural heritage tourism, visitation to the World Heritage-listed New England and Oxley Wild Rivers National Parks and many festivals and events is attracting investment in

world-class facilities and vibrant communities.

Residents and visitors enjoy a beautiful and healthy natural environment that includes the Gwydir Wetlands. Sustainable and innovative approaches utilise and maximise important water resources.



Day 3: Grafton, NSW/ Gold Coast, QLD

Key Themes: spectacular environment and vibrant communities

North Coast Region is the best region in Australia to live, work and play.

The natural beauty of its environment continues not just to enrich the lives of its residents, but also to sustain a thriving tourism and lifestyle economy. The North Coast's 15 World Heritage Areas are a symbol of its stunning biological diversity. The region's natural environment is safeguarded and enhanced to deliver a prosperous future and to ensure that it remains one of the most beautiful parts of the State.

Adding to the attraction of the region is a network of cosmopolitan cities and centres linked by the Pacific Highway and interconnected to vibrant coastal, hinterland and rural communities.

The regional cities of Tweed Heads, Lismore, Coffs Harbour and Port Macquarie are the primary growth anchors, delivering new jobs, and more diverse housing as well as high quality essential services.

The cities are complemented by two strategic centres, Ballina and Grafton, with new housing and employment opportunities and major infrastructure, such as the Grafton Hospital and Ballina-Byron Gateway Airport. A network of attractive coastal and hinterland centres, such as Bellingen, Byron Bay, Casino, Kempsey, Kyogle, Murwillumbah and Macksville complement the cities and strategic centres.

By supporting local and creative industries, agriculture and tourism, reinforcing local character and providing greater housing choice, the network of centres has enlivened their communities and enhanced the region's charm and community wellbeing.

Day 4

Arrive Brisbane

Visit to an Australia University in Brisbane for an educational and research discussion

Delegates will be sent to Brisbane International airport or major hotels for departure

Route 3: Sydney NSW towards Melbourne Vic field trip

Date: 4 -7 July 2019

Price: \$1,600pp (including motel accommodation)

Pick-Up Points

7.30 – 8.30am, 4th July

Hilton Sydney Hotel CBD pick-up service

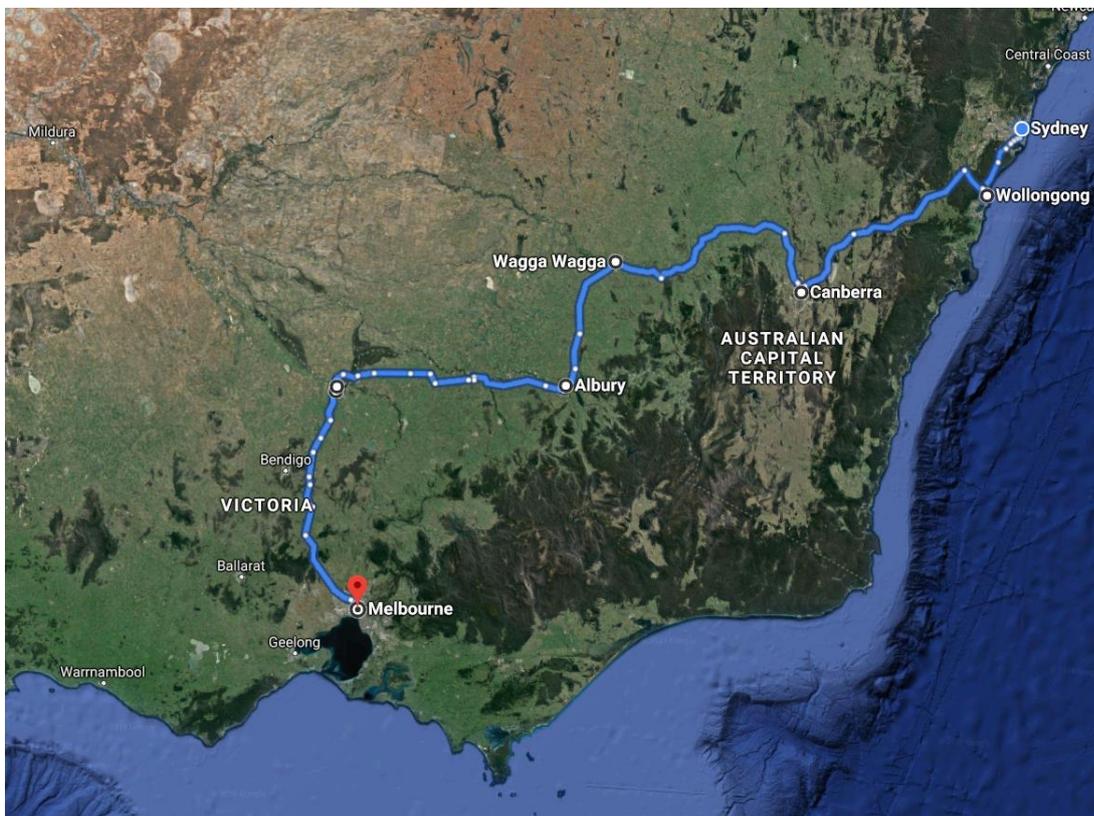
Drop-Off Points

Mid-afternoon (4pm), 7th July

Drop-off at Brisbane Airport or by arrangement

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<https://goo.gl/maps/9CqEmLAGkWU2>

Day 1: Wollongong/Canberra -

Key Theme – Urban Planning, Cities and Centres

the prosperous Illawarra-Shoalhaven region:

- a region with a variety of housing choices, with homes that meet needs and lifestyles;
- a region with communities that are strong, healthy and well-connected;
- a region that makes appropriate use of agricultural and resource lands; and
- a region that protects and enhances the natural environment.

At the economic and cultural heart of the region is Metro Wollongong – a nationally significant city. Much of the future prosperity of the region will be built on the potential to generate jobs from the integration of education, health care, business and tourism precincts in Metro Wollongong.

Positive regulatory settings and policies that overcome barriers to investment will help the region to grow and flourish. The benefits of growth will be used to protect and restore the environment and build its resilience to cope with challenges from natural hazards and climate change, and to rebuild disadvantaged communities.

Canberra is the capital city of Australia. With a population of 410,301, it is Australia's largest inland city and the eighth-largest city overall. The city is located at the northern end of the Australian Capital Territory, 280 km (170 mi) south-west of Sydney, and 660 km (410 mi) north-east of Melbourne.

The site of Canberra was selected for the location of the nation's capital in 1908 as a compromise between rivals Sydney and Melbourne, Australia's two largest cities. It is unusual among Australian cities, being an entirely planned city outside of any state, similar to Washington, D.C., in the United States, or Brasília in Brazil. Following an international contest for the city's design, a blueprint by American architects Walter Burley Griffin and Marion Mahony Griffin was selected and construction commenced in 1913. The Griffins' plan featured geometric motifs such as circles, hexagons and triangles, and was centred on axes aligned with significant topographical landmarks in the Australian Capital Territory.



Day 2: Wagga Wagga/Albury

Key Theme: CLIMATE CHANGE AND AGRICULTURE

The climate of Riverina Murray reflects the diverse landscape. In the west and northwest there is generally lower rainfall, hotter and drier conditions. In the east and south east the rainfall is higher with mild summer temperatures and cold winters especially at higher elevations

The region currently experiences considerable rainfall variability across the region and from year-to-year and this variability is also reflected in the projections. However, all of the models agree that spring rainfall will decrease in the future.

The potential impacts of these changes to climate on the agricultural industry include:

- Decreased water availability due to higher temperatures.
- Increased water demand arising from greater evapotranspiration.
- Increased incidence of damage from sunburn and other breakdown disorders due to increase in the number of hot summer days (over 35°C).
- A reduction in the number of frost days reducing winter chilling (which is important for some fruit trees for setting fruit, meaning that it may become necessary to consider low chill varieties and alternative management options).
- Increased intensity of frosts during spring may damage developing fruit and production.
- Increase in intense weather events (extremely heavy rainfall events) impacting on fruit quality.

Climate change has and will impact the agricultural industry within Central West & Orana. In the short to medium term producers will modify practices, production mixes and varieties to spread risk and reduce the impacts climate change. Some strategies are already being adopted such as buying or leasing land in areas with more reliable rainfall or irrigation water security. In the longer term, some areas may see significant change in the mix of agricultural industries.

Over the long term, climate change (extreme temperatures) may encourage some of horticulture industries to relocate to cooler areas to reduce the impacts of prolonged periods of extreme temperatures during the growing season. The risk of crop failures due to more variable/volatile growing conditions is also predicted to increase, affecting the industry's ability to meet increasingly specific and targeted quality assurance/market requirements. The horticulture industry may also be affected by policies to mitigate climate change, which are likely to result in higher energy, input and transport costs, for example cooling.

Day 3: Moama, NSW / Echuca, VIC

Theme: Destination Riverina Murray and region's tourism industry
(Meeting with a Local Council in Riverina Murray)

Destination Riverina Murray is one of six Destination Networks established by the NSW Government. The Networks are responsible for driving the growth of the visitor economy in each respective region to help achieve the NSW Government's overnight visitor expenditure goal for 2020. The Destination Networks facilitate growth in the visitor economy at a local level by representing and coordinating the region's tourism industry.



The Riverina Murray is a leading and highly diversified economy, with growing local job opportunities and sustainable communities. The region is acknowledged as one of Australia's premium agricultural areas. It leads the way in agricultural innovation and value-adding, and is leveraging advanced and automated technologies to maximise agribusiness diversification. This agricultural base benefits from a well-connected export conduit to Melbourne and ports in NSW.

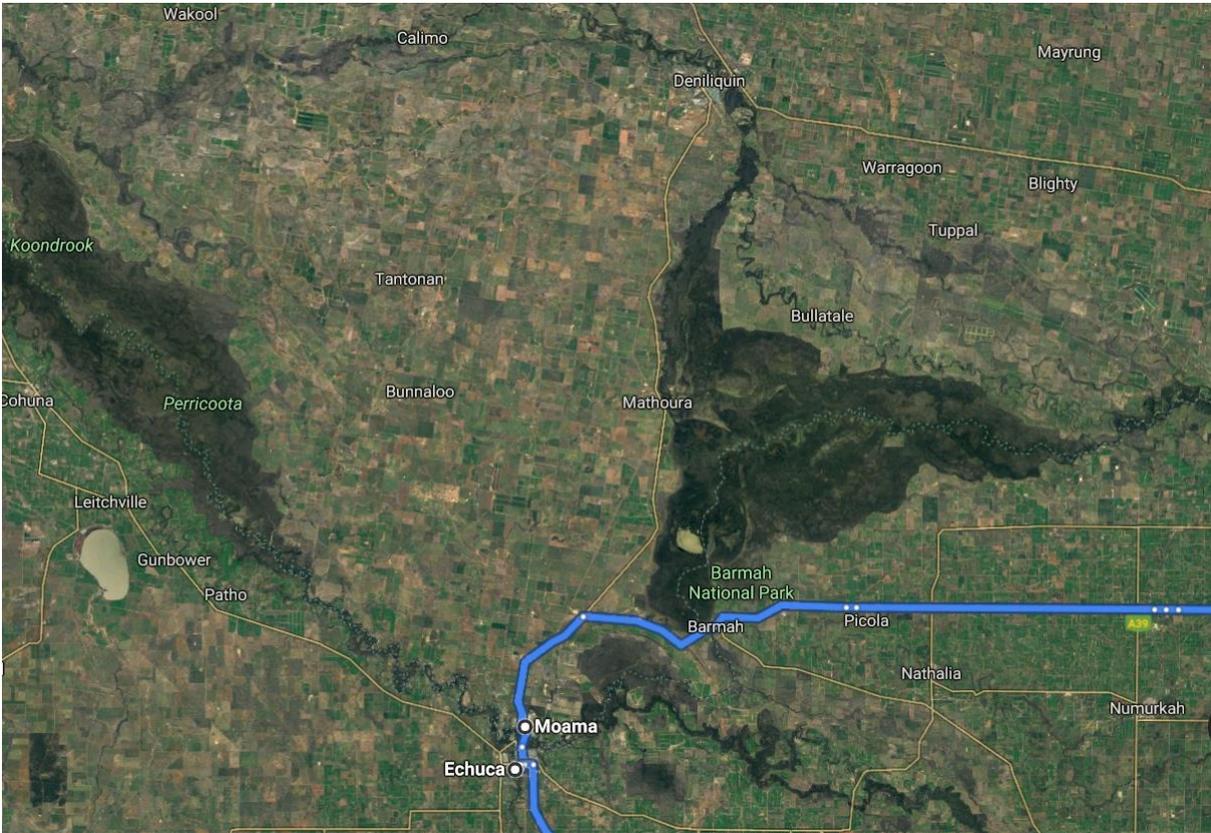
Identifying and protecting agricultural land preserves the region's fresh produce sectors and their potential to keep growing. Packaged food and fresh produce are highly sought after in domestic and global markets.

The region sets benchmarks for sustainable and equitable water management for industries, communities and the environment, and is renowned as a leader in climate change adaptation and resilience to natural hazards. Environmental assets, including major rivers, waterways and wetlands, are protected and actively managed for the ongoing enjoyment of residents and visitors.

The region is acknowledged for its role as a major freight and transport distribution hub. The delivery of essential infrastructure is generating more efficient and higher capacity freight routes, better access to air and sea ports, competitive freight costs and higher regional productivity.

The region is characterised by a network of centres comprising vibrant communities making the most of successful places, abundant arts, dining, entertainment and recreational opportunities. Communities enjoy a high standard of living with housing choice for all sections of the community. These are well-connected communities as a result of improved public and community transport and reliable telecommunications systems.

Acknowledging, protecting and celebrating Aboriginal cultural heritage and historic heritage has reinforced the character of the region and consolidated the sense of belonging in communities. This Aboriginal heritage, the river lands and the overall regional character will continue to draw visitors to the region and its towns.



Day 4

Arrive Melbourne

Visit to an Australia University in Melbourne for educational and research discussion

Delegates will be sent to Melbourne International airport or major hotels for departure/further stay

Route 4: Sydney NSW towards Uluru/Ayers Rock NT field trip

National Park Management, Natural resource conservation, Desert landforms

Date: 4 – 6 July 2019

Price: AU\$993 (including accommodation and field vehicle hiring, Pickup at the Uluru/Ayers Rock airport)

Pick-up points: 13:15, 4 July Uluru/Ayers Rock Airport

Drop-off points: 14:10, 6 July Uluru/Ayers Rock Airport

Uluru is made of sandstone about half a billion years old. This is a place where extraordinary natural wonders interweave with 30,000 years of cultural and spiritual heritage.



This field trip will explore several national parks and visit the world heritage. Participants will get a better understanding of natural resource conservation including rare plants and animals in Australia as well as various special landforms in the middle part of Australia including red soil, desert and canyon.

Day 1: Sydney/Uluru

Key theme – Desert landforms, natural resource conservation



Explore Uhuru-Kata Tjuta National Park. Visit Kata Tjuta for understanding ancient civilization and investigate rare plants and animals when walking along the gorges of the two highest peaks in Kata Tjuta. Introduction to aridzone landscape and vegetation.

Day 2: King Canyon

Key theme – Canyon landforms, desert landforms



Explore Watarika National Park. Investigate riverbed and canyon landforms by hiking (around 4-5

hours). Observing geological features such as formation of rocky features and deep gorges, as well as typical forest typical in central Australia.

Day 3: Uluru/Sydney

Key theme – Rock landform, ancient historical civilization



Explore rock landform (Ayers rock) formed 500 million years ago. Walk along the Kuniya Trail to investigate the special plants and the rock paintings of the ancient local people and visit the Mutitjulu water pool where the aborigines lived for thousand years, investigate local civilization in the villages by hearing the historical and cultural stories.

Please note that this trip includes long-time hiking routes, and July is the cold time for the whole year when there is frost and mist every morning but little rain. Please wear appropriate clothes and shoes.