

Metropolitan Rural Area/ Peri-urban futures- Environmental scan & case studies

The PESTLE framework is used as a categorisation tool for undertaking environmental scanning for the Metropolitan Rural Area (MRA) and more broadly Peri-urban Areas over an approximate 10-year time frame- from the current day up to 2035. Environmental scanning using the framework helps to identify and categorise trends, emerging trends and potential signals of change across the following domains:

- Political/ideas
- Environmental
- Social and cultural
- Technological
- Legal/policy
- Economic

The scan has been undertaken across three spatial scales, illustrating the connections between trends and change occurring or that may occur at the global, national and regional (Western Parkland City) scales.

Trends and signals of change have been collated from discussions at MRA Project Working Groups and workshops for the MRA Economic Futures Discussion paper, research undertaken for the project and further scanning of news, articles, blogs, journal articles and reports.

The scan is followed by a selection of case study summaries, selected through research and recommendations of Project Working Group members. The case studies, mostly from the Western Parkland City, illustrate a number of emerging trends identified in the environmental scanning exercise and provide an indication of alternative possible futures for the MRA- beyond a business-as-usual approach.

Political/ideas:



Western Parkland City	Australia	Global
* Rise of resilience and recovery narratives * Continued urban sprawl & dominance of 'growth areas', yet emerging NSW government agenda focused on infill development * Planned Aerotropolis, Bradfield as metropolitan centre * 6 cities mega-region (previously 3 cities); & focus on infill development diluting WPC's importance politically * Urban greening, green grids as concept * Renewable energy as an increasing focus of government * Rise in wellness agenda leading to demand for facilities (recreation, retreats, canyoning, mountain-bike riding etc) * Community supported agriculture	* Housing affordability agenda has become defining political challenge * Change from conservative to more progressive government in 2022/3 (National & NSW) * Rise of politicians with green agenda * Urban agriculture growing as concept * Paddock to plate mentality & importance of food provenance in marketing * Emerging narrative of self-sufficiency after COVID shortages and global unrest * Sea and tree change movement continuing with highest demand closer to cities * Pressure from development lobby in NSW for expanding the MRA	* Increasing understanding of food provenance/ sourcing and artisan movements * Rise of regenerative thinking and sustainability focus * Continued rise of the sharing economy * Global conflicts, incl. impacts on supply chains * Far right and conspiracy theories gain ground, e.g. 15 min neighbourhoods as conspiracy * NIMBY (not in my backyard) & counter YIMBY (yes in my backyard movements) * Growing health and wellbeing agenda * Biodiversity stewardship and nature-first policies, rewilding

Environmental:



Western Parkland City	Australia	Global
• Environmental * Urbanisation leading to loss of biodiversity * Flood risk and storm risk increasing (HNV & Georges River); landslips and other impacts in non-flood plains) * Urban heat, heatwaves, bushfire risk increasing * Likelihood of increased severity and frequency of drought * Air quality decline (increased traffic from airport and population increase) * Impacts of WSIA (aircraft noise, air pollution, traffic congestion, loss of farmland) * Circular economy initiatives growing	* Growing recognition of biodiversity * Increased demand for climate-adaptive farming, drought-tolerant farming, improved water management, * Rise in importance of soil health and conservation * Recognition of importance of pollinators * Increase in people living in medium & higher density housing * Urban sprawl, increased commute times * Emerging- water shortages/ need for more irrigation especially in summer * Increasing climate variability * Biosecurity risks increasing	* Push for net zero emissions * Rise of regenerative agriculture and other sustainable farming practices, e.g. integrated pest management * Growing global populations leading to pollution, waste management, increased energy and resource demands * Increasing environmental injustice, with lower socio-economic groups suffering from climate impacts & pollution * Future farm policies requiring tree coverage (e.g. 10% Wales) * Agri-Environment Climate Schemes (e.g. Scotland) * Global disease and pandemic risk increasing (e.g. avian flu)- impact on poultry/livestock

Social & cultural:



Western Parkland City	Australia	Global
* Rise of agritourism, incl farm-gate enterprises, pick-your-own & farm-stay accommodation * Increased demand for locally-sourced food, farmers markets etc (also challenges due to cost of living crisis) * Community awareness of climate change risks & demanding action * Rapidly growing population in WPC * Pressures on food security & declining land for food production * Psychological and health impacts from climate-change disasters * Increase in demand for paddock-to-plate experiences, vineyards, brewing etc. * Western Sydney events increasing in popularity, including multicultural and food-based events	* Recognition of Aboriginal culture, Country and sovereignty * Demand for eco-tourism/visitor experiences increasing * Demand for culinary experiences, viniculture and breweries * Open space increased in importance during COVID * Artisanal food production & farmers markets increase in popularity * Restaurants/wineries with paddock to plate philosophy increasing * Work-life balance for some workers, enabling increased leisure time * Population growth flux due to COVID * Ageing population * Declining housing affordability * Heritage-based tourism opportunities	* COVID impacts led to increase in focus on health * Alternative proteins/alternatives to meat and dairy * Rise of vegan & vegetarianism * Threats to indigenous lifestyle and connection to land from urbanisation and resource extraction * People want to connect to/understand the source of food and resources/ reduce food miles * Permaculture & community gardening * Increasing demand for indigenous cultural experiences

Technological:



Western Parkland City	Australia	Global
* WSIA & agribusiness hub provide opportunities for agriculture and technology * Reduced use of public transport; rise in car use for commuting * Water-recycling tech is improving (future farming potential, e.g. aquaculture/hydroponics) * Circular economy focus provides opportunities for farming * Stormwater harvesting re-use technology improving * Packaging/transport technology enables servicing of overseas markets * Opportunities for education in advanced agricultural technology	* Increase in enabling technology for working from home * Rise of electric vehicles * Increase in intensive greenhouse/glasshouse production * Opportunities for farmers to integrate renewable energy into operations and as an income source	* Application of drone technology, GPS, data analysis to improve agricultural efficiency * Artificial intelligence & autonomous systems * Controlled environment agriculture (e.g. vertical farming, growing in greenhouses) * Bio-technology and Genetic engineering * Increasingly digital economy * Renewable energy & battery storage * Growth of vertical farming * Plant-based protein alternatives * Blockchain/ allows tracing of supply chains



Legal/policy:

Western Parkland City	Australia	Global
* Shortfall in infrastructure provision in Western Sydney * Insurance for homes & businesses becoming less viable due to climate change/ some areas can't be insured * Shortage of employment land in Sydney may impact policy approach to peri-urban land * Agritourism changes in NSW, increasing permissibility of agri-tourism operations	* National and state biodiversity legislation recently investigated- will help reduce land-clearing and improve biodiversity * Nature-first approaches increasing * Federal policy on carbon pricing * Indigenous land rights/policies post Voice referendum * Phase-out of caged eggs 7 potential impact on smaller egg producers * Increasing policy relating to environmental services and valuing green infrastructure	* Rights of nature laws and global attention on nature-first policies and legislation to reinstate global biodiversity * Animal rights movements continued presence * Impacts of pesticides & other chemicals (legal cases increasing, e.g. 3M, Monsanto. PFAS) * Rise of carbon markets/ carbon pricing with implications for industry * Climate change litigation increasing

Economic:



Western Parkland City	Australia	Global
* Visitor economy increases in importance * WSIA- increased tourism for Western Sydney including for nature-based tourism and agritourism. * Urbanisation leading to loss of agricultural land * Opportunities for research and development in advanced agriculture e.g. plant -based protein, vertical farming) * Boost for local centres and businesses (more people working from home and spending locally) * Increased cost burden for councils due to failing infrastructure from extreme weather events * Rise of the knowledge economy * Increasing land prices making farming uneconomical * Cost of potable water increasing, leading to increased costs for irrigation	* Decline in housing affordability * Working from home & hybrid working due to pandemic and likely here to stay * Visitor boom in rural areas after COVID lockdowns * Rise in sustainable, transparent business, purpose-led and cooperatives * Cost of construction materials increased; shortage * Value-adding to agricultural products/ boutique and niche products * Adventure tourism industry expansion (e.g. mountain biking) * Agricultural land increasing in value * Value of agricultural commodities in flux& increasingly vulnerable to climate disasters	* Growth of nature-based tourism industry * Global cost of living increases in 2023 * Rapidly rising cost of energy * Globalisation, trade agreement trends (need more research on this) * Global shortage of construction materials * Growth of Circular economy * Carbon market continues to grow (economic opportunities for silviculture and bio-banking) * Nature repair market continues to grow

MRA Case Studies

Western Sydney Parklands- Urban Farms (Horsley Park Farms)

<https://www.westernsydneparklands.com.au/places-to-go/urban-farms/>

LGA: Fairfield

Trends illustrated: Agribusiness, community agriculture

The Horsley Park Farm is a 100 hectares of urban farming country located in the heart of the Parklands at Horsley Park, growing crops such as strawberries, zucchinis, Lebanese cucumbers, snake beans, cherry tomatoes, Asian greens, sugar cane and cut flowers.

The farms operate on leased land from the Parklands and sell their crops to the community, supply cafes, restaurants and food trucks, local markets and Sydney Markets at Flemington. The Farm includes farmgate stalls at Heng Fresh Farm, Sun's Fresh Farm and Lam's Farm Fresh which are located on Ferrers Road.

The vision for Horsley Park is to expand the Farm Gate trail, allowing locals and visitors to buy fresh produce directly from local growers. People will be able to cycle or stroll to market gardens along a planned network of new paths and trails. The Western Sydney Parklands are also looking at the potential for a community farming hub and cafe.



Horsley Park Farm. (<https://www.westernsydneparklands.com.au/places-to-go/urban-farms/>)

Muru Mittigar, Llandilo

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

LGA: Penrith

Trends illustrated: Indigenous tourism, cultural tourism, horticultural enterprise

Muru Mittigar is a Dharug-run social enterprise based in the Western Parkland City. It seeks to create a better understanding of Aboriginal culture in the wider community; create new jobs; develop workplace skills training and increase sustained employment opportunities for Indigenous Australians.

The organisation achieves this by providing quality contracting and consulting services to Government and business, in Land Management, Education and Tourism and through investing in well-being and financial counselling services for the Aboriginal community.

The enterprise includes the Muru Mittigar Native Nursery which is located in Llandilo, a wholesale and retail plant nursery, specialising in growing plants from provenance seed collected in the local area. They also offer an insight into the authentic Australian Indigenous culture and heritage through providing cultural tourist guides and activities.



Cultural Tour in Muru Mittigar, Llandilo. (<https://www.sydney.com/things-to-do/aboriginal-culture/bush-tucker>)

River Stone Fish Farm- Sustainable Australian Barramundi

<https://riverstonefishfarm.com.au/>

LGA: Hawkesbury

Trends illustrated: Circular economy, sustainable aquaculture and hydroponics

River Stone Fish Farm is an innovative aquaculture centre that produces premium grade, sustainable barramundi for the Australian market. The system is free of environmental contaminants and has no impact on wild barramundi populations, or the wider marine environment. The barramundi is produced in recirculating aquaculture systems and fed a plant-based diet, so is not dependent on wild caught fish for feed.

The fish farm uses aquaponics, a food production system that combines Aquaculture & Hydroponics in a symbiotic environment. This loop cycle uses excess nutrients from the water, feeds it to plants as nutrients and then circulates the water back to the aquaculture system. The production system is particularly effective at minimising the use of water in agriculture. Excess excrement is sold to market as 'Swift-grow' a fertiliser that restores depleted natural soil microbiology.

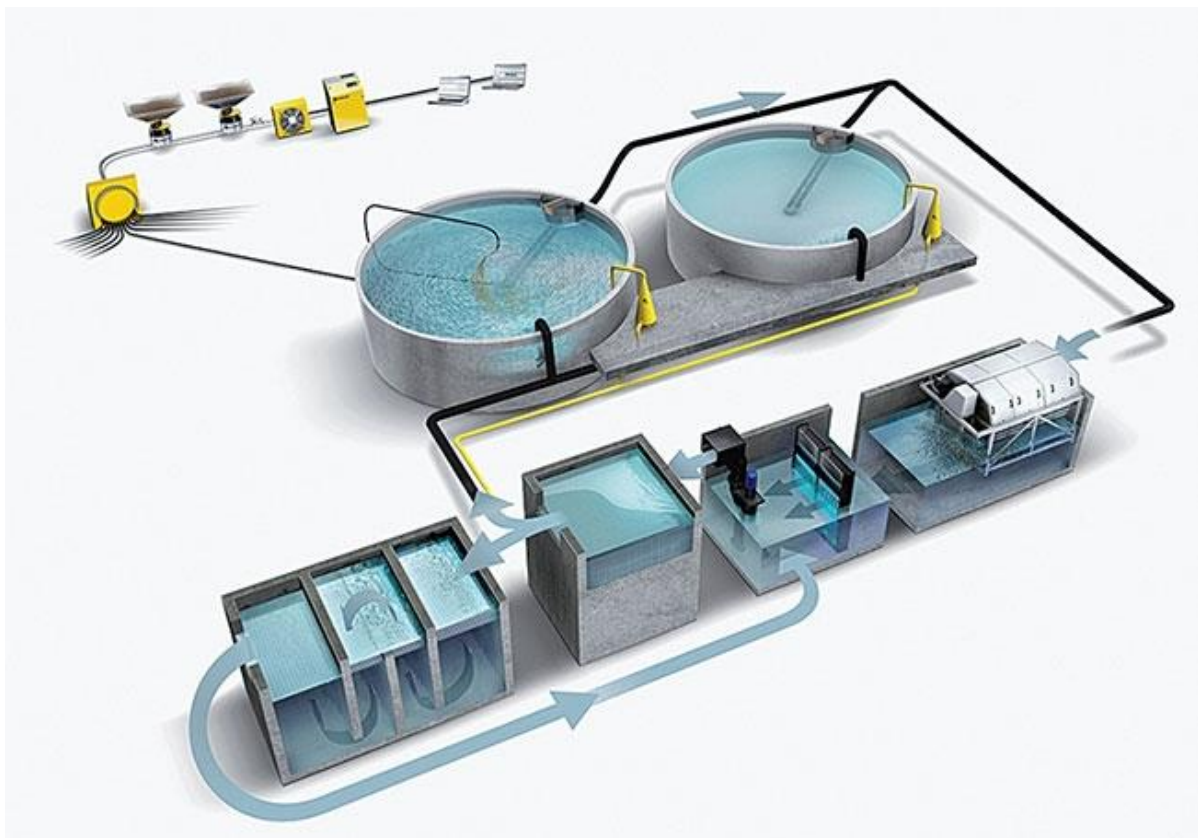


Diagram of Recirculating Aquaculture System (RAS). (<https://www.hatcheryinternational.com/innovation-leading-new-wave-of-ras-technology-3355/>)

Elizabeth Macarthur Agricultural Institute, Menangle

<https://www.dpi.nsw.gov.au/about-us/science-and-research/centres/emai/our-facilities-and-services>

LGA: Wollondilly

Trends illustrated: Agricultural innovation, agricultural education

The Elizabeth Macarthur Agricultural Institute (EMAI) is a biosecurity facility that enhances food and fibre production and helps protect the environment. The laboratory conducts research and diagnostics for high impact existing and emerging diseases of plants and animals. As part of the Department of Primary Industries, the facility contributes to the security and prosperity of the agricultural sector.

The EMAI includes various facilities and services including research, education, farming, and emergency response. The research facility includes veterinary laboratories, plant health laboratories, greenhouses and biocontainment facilities. The Department of Education and Training (DET) uses the resources of EMAI for its school's education program, with more than 6,000 students visiting the Centre each year.



Elizabeth Macarthur Agricultural Institute Research Centre. (<https://www.dpi.nsw.gov.au/about-us/science-and-research/old/centres/emai>)

Hillbilly Cider, Bilpin

<https://hillbillycider.com.au/about/>

LGA: Hawkesbury

Trends illustrated: Agri-tourism, visitor experience

Hillbilly Cider is a farm gate enterprise located in Bilpin. Established in 2020, Hillbilly Cider offers a visitor experience that includes cider tasting and purchase, a restaurant and picnic facilities.

The award-winning business grows hundreds of different apple varieties. It also aims to improve sustainability through minimising packaging and using imperfect produce from neighbouring orchards to reduce food waste.



Hillbilly Cider in Bilpin. (<https://concreteplayground.com/sydney/bars/hillbilly-cider-shed>)

Fernhill Estate, Mulgoa Valley

<http://fernhillestate.cve.io/the-estate>

<https://www.westernsydneparklands.com.au/about-us/fernhill-estate/fernhill-estate-environment-program/>

LGA: Penrith

Trends illustrated: Heritage-tourism (colonial), eco-tourism, biodiversity stewardship

Fernhill Estate is a rural parkland and homestead located at the edge of the Cumberland Plain, in the scenic Mulgoa Valley and at the foot of the Blue Mountains. The 423-hectare Estate was purchased by the NSW Government in 2018 and will progressively be opened and managed as a public park. It was vested to Western Sydney Parklands Trust as part of the new Greater Sydney Parklands agency in 2020.

The Estate was established on Darug land as part of the early European settlement of Mulgoa through a series of land grants to William Cox and his sons. Fernhill House, completed in 1843, was built by Edward Cox on the Estate and is one of the most significant Greek Revival houses from the Early Colonial era.

The Estate has two Biodiversity Stewardship Agreements which cover and ensure the conservation protection of nearly two thirds of the area. The biodiversity management is focused on invasive species control and bushland and habitat restoration.



Fernhill Estate in Mulgoa Valley. (<https://www.nationaltrust.org.au/blog/fernhill-estate-mulgoa-draft-landscape-masterplan/>)

Harvest Farms, Bilpin

<https://harvestfarms.com.au/#about>

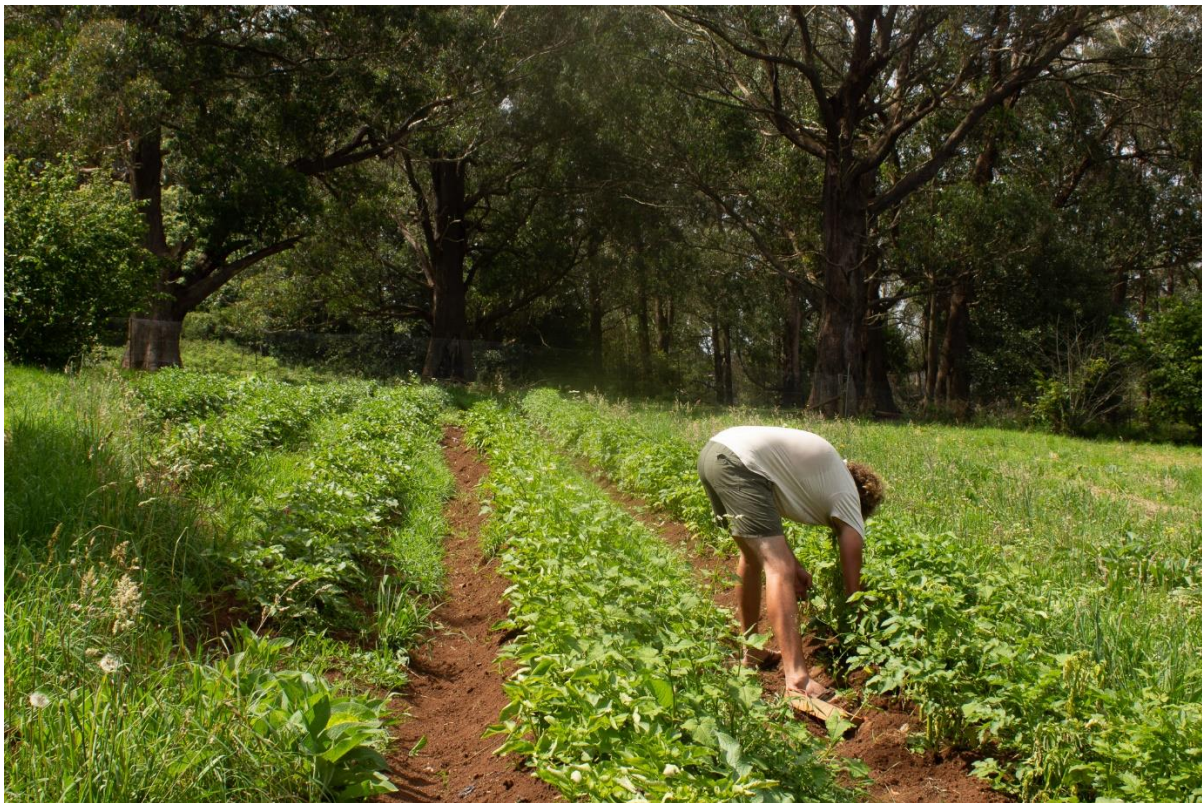
LGA: Hawkesbury

Trends illustrated: Community-supported agriculture, regenerative agriculture

Harvest Farms is a Community Supported Agriculture (CSA) project over two farms in the Hawkesbury. The goal is to “transform two unused pieces of land into thriving farms, and to provide unique, area specific food for the community in a way that is beneficial to the environment.” The project has restored orchards and leased and worked up available land for growing vegetables.

The project enables people to sign up for memberships in exchange for fresh and ethically grown produce every fortnight.. A CSA provides the community with the opportunity to be more directly involved in the farm where their food is grown and to have access to quality, seasonal, local, and organic produce.

Harvest Farms illustrates a growing interest in food security and provenance and enables the community to co-create a community based, organic, local food system. CSA projects are in the embryonic stage in Australia but are part of the global movement towards environmental restorative agriculture.



Harvest Farm in Bilpin. (<https://harvestfarms.com.au/>)

Wildcat Conservation Centre, Wilberforce

<https://wildcatcentre.org.au/>

LGA: Hawkesbury

Trends illustrated: Visitor economy

The Wildcat Conservation Centre focuses on the preservation and conservation of wild cats, including a conservation breeding program for the Clouded Leopard and Cheetah.. It is a privately owned facility of 10 hectares northeast of Sydney and operates as a charitable organisation.

The centre provides an opportunity for people to visit through pre-booked private tours to learn about the conservation breeding programs and research efforts to conserve the smaller enigmatic wild cat species.

The Conservation Centre attracted up to 3,000 visitors a year before the pandemic. These visitors were mostly from the Sydney metropolitan area, though regional, interstate and international tourists were also increasing.



The Wildcat Conservation Centre, Wilberforce. (<https://www.sydney.com/destinations/sydney/sydney-north/hawkesbury/attractions/wild-cat-conservation-centre>)

Belgenny Farm, Camden South

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

LGA: Camden

Trends illustrated: Heritage-tourism (colonial), visitor economy, agricultural education

Belgenny Farm, established by early colonists John and Elizabeth Macarthur in 1805, contains the earliest collection of colonial farm buildings in Australia. It was part of the original 2,000-hectare Camden property granted to John Macarthur in 1805. The site was saved from housing development when the NSW Government purchased the land in 1984 and is now State Heritage listed and managed by the NSW Department of Primary Industries.

The property is a major educational centre with direct links to Australia's agricultural history and located adjacent to the Elizabeth Macarthur Agricultural Institute (EMAI), established for biosecurity and agricultural research. It illustrates life on a working farm through different eras and is also a venue for functions and events. This includes weddings, celebrations, film and photo shoots and School excursions.

There are a number of tour options offered at Belgenny, from free self-guided and guided small groups to interactive tours of the Creamery Interpretive Centre.

The farm also offers a range of public events including a bridal expo, Christmas functions, history showcase and other celebrations.



Marketplace in Belgenny Farm. (<https://www.belgennyfarm.com.au/events/functions>)

Sydney International Regatta Centre, Castlereagh

<https://www.sport.nsw.gov.au/regattacentre>

LGA: Penrith

Trends illustrated: Visitor economy/adventure tourism, (international scale), recreational use of MRA

The Sydney International Regatta Centre (SIRC) is a 196-hectare outdoor sport and entertainment facility, originally built for the Sydney 2000 Olympics at the site of former quarrying land at Penrith Lakes. The Centre includes the Olympic rowing venue, 5km of cycling and walking paths, picnic grounds, lakeside BBQ facilities and function/conference rooms.

The venue is a popular sporting, corporate and social venue and is open to the public for recreational use on non-event days, staging over 400 events each year. The Centre averages over 50,000 visitors a month, resulting in over half a million international and domestic visitors annually.



Aerial view of the Sydney International Regatta Centre. (<https://www.sport.nsw.gov.au/regattacentre>)

Dryridge Estate, Megalong Valley

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

LGA: Blue Mountains

Trends illustrated: Agri-tourism, agri-adventure, viniculture, events, farm-stays

Located in the Megalong Valley in the west of the Blue Mountains LGA, Dryridge Estate is a boutique vineyard with a cellar door that offers wine tasting and food.

On approximately 51 ha, the property includes a wine business with approximately 5ha of vines and substantial grazing land, and a 6-foot walking track which traverses the property. The Estate also has an ecolodge, and hosts events and weddings.



Dryridge Estate in Megalong Valley. (<https://www.dryridge.com.au/>)

National Vegetable Protected Cropping Centre

<https://www.westernsydney.edu.au/nvpcc>

LGA: Hawkesbury

Trends illustrated: Agricultural innovation and technology, agricultural education

Launched in 2017, the facility is promoted as Australia's first state-of-the-art vegetable glasshouse production research centre. Blending research and training excellence, the National Vegetable Protected Cropping Centre provides access to a high-tech production system, delivering opportunities for learning, training and education and increasing industry collaboration and engagement. The Centre has a diverse team of researchers and looks to integrate scientific research with aspects of business, economics, marketing and social impact.

Research activities in the Centre investigate crop production under highly controlled environmental conditions and have included testing the impact of Smart Glass (SG) films on improving energy-; water- and nutrient-use efficiency projects and crop production improvement. The Centre hosts a significant number of school and industry engagements, including visits and tours from industry stakeholders, research collaborators, government delegations, community groups, and school groups through the Centre's training program.



National Vegetable Protected Cropping Centre. (<https://ausveg.com.au/articles/be-a-sector-leader-in-protected-cropping/>)

Logan Brae Orchard, Blackheath

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

LGA: Blue Mountains

Trends illustrated: Agri-tourism, farm-stays, farm-gate experiences, local produce

Logan Brae Orchards is a family run orchard on the Shipley Plateau, located 5 minutes from the Blue Mountains town of Blackheath. Every weekend during season, March through June, visitors are able to buy apples, juice and a variety of other produce from a farm-gate.

The estate also includes accommodation.



[Logan Brae Orchard in Blackheath. \(https://www.tripadvisor.com.au/Attraction_Review-q504238-d6562438-Reviews-Logan_Brae_Orchard-Blackheath_Blue_Mountains_New_South_Wales.html\)](https://www.tripadvisor.com.au/Attraction_Review-q504238-d6562438-Reviews-Logan_Brae_Orchard-Blackheath_Blue_Mountains_New_South_Wales.html)

Harvest Farm Gate Trail- Hawkesbury, Wollondilly & Penrith

www.harvesttrailsandmarkets.com.au

LGA: Hawkesbury, Wollondilly, Penrith

Trends illustrated: Agricultural education, agri-tourism, paddock to plate

Harvest Trails and Markets (HT&M) is a not-for-profit community incorporated organisation formed in 2000 by farmers in the Hawkesbury region. HT&M helps connect producers directly with consumers to build alternative distribution channels for farmers, growers and producers. Their mission is to “enhance the sustainability and viability of Australian agriculture, with a focus on small-scale, family farms and artisan producers.” The program has extended to include harvest trails across the Sydney 6 cities region. Members of the program share a common commitment to preserving the farming and agricultural heritage of the region.

The Hawkesbury Farm Gate Trail extends from Hornsby Shire in the east through Baulkham Hills and onto the Hawkesbury Valley and Mountains up to Mt Irvine in the west, providing a visitor experience that capitalises on the scenic landscapes and food production in the Western Parkland City. The program has extended to include a Penrith Harvest trail and Wollondilly Harvest trail, with the following activities represented:

- Ambrosia Olive Farm: Olive farm with seafood restaurant
- Anderson Farm: Fruit farm
- Bilpin Cider Co: Brewery
- Bilpin Country Lodge: Farm stay
- Bilpin Fruit Bowl: Fruit and vegetable store
- Bilpin Springs Orchard: Fruit picking orchard
- Cedar Creek Orchard: Shed sales of nectarines/ peaches, apples, persimmons
- Enniskillen Orchard: retail space, cafe and bar producing and selling jams
- Glenbernie Orchard: Fruit orchard/ farm
- Good AZ Gold Tours and Transfers: Travel agent
- Harvest Farms: Agricultural service
- Hawkesbury Tourism Visitor Information Centre: Tourist information centre
- Hillbilly Cider Shed: Brewery
- Historic Hawkesbury Agricultural College: Walking Tour
- Karu Distillery: Distillery
- Kookootonga Chestnut & Walnut Farm: Pick your own farm produce
- Kurrajong Australian Native Foods: selection of gourmet native foods and spices
- Kurrajong Kitchen: food manufacturer
- Llandilo Farm Fresh Eggs: poultry farm
- Loxley on Bellbird Hill: Event venue
- M & A Butchery: Butcher shop
- Madisons Mountain Retreat: Accommodation
- Mowbary Park Farms Stays: Rural lodge
- Nutwood Farm at Mt. Irvine: Nut orchard
- Penrith Tourism: Penrith resource centre
- Pepes Ducks: Livestock producer
- Pine Crest Orchard: Orchard and sale of jams, local honey and nuts
- Purple Noon Gallery: Art gallery
- Riverview Produce: Seasonal vegetables
- Schofields Orchard: Mandarin and oranges orchard

- Secret Garden and Nursery: community hub offering a retail plant nursery, café, gift shop, farmyard animals, fairy garden and children's playground.
- Shields Orchard: Orchard and pick your own apples
- The Great River Walk: Bridge that connects Emu Plains to Penrith
- TNT Produce: Pick your own farm produce
- Wildwood Garden: Garden with café, gift shop & specialist nursery
- Zokoko Chocolates and Morgans Coffee: Chocolate shop



Harvest Farm Train. (<https://www.sydney.com/destinations/sydney/sydney-north/hawkesbury/food-bowl-and-farm-stay>)

Treetops Adventure Western Sydney, Abbotsbury & Yarramundi

<https://treetopsadventure.com.au/location/nsw-western-sydney/>

LGA: Fairfield, Hawkesbury

Trends illustrated: Adventure tourism, sustainable tourism, visitor economy

Treetops Adventure Western Sydney offers an outdoor nature-based recreational experience, with facilities in the Western Sydney Parklands and Yarramundi (note: Yarramundi temporarily closed).. Both locations include a series of treetop courses, featuring suspended bridges, ziplines, and challenging obstacles.

With multiple difficulty levels, Treetops caters to various skill levels and ages, and is suitable for children and adults.

Treetop adventure parks and ziplines are a type of outdoor recreational facility that has capitalised on the increasing popularity of activities that combine adventure and nature.



Treetop course in Treetops Adventure Western Sydney. (<https://treetopsadventure.com.au/location/nsw-western-sydney/>)

Mulloon Institute (Queanbeyan LGA)

<https://themullooninstitute.org/projects>

LGA: Queanbeyan

Trends illustrated: regenerative agriculture

The Mulloon Institute is a not for profit, research, education and advocacy organisation. Located near Queanbeyan, it is recognised globally as a demonstrator of sustainable agriculture and environmental regeneration through landscape rehydration and restoration. This leads to improved agricultural productivity, enhanced environmental biodiversity, improved habitat for threatened species, and greater community resilience to drought, bushfire and flood.

The institute includes an education program which helps Australian farmers use landscape rehydration to boost their land's resilience to climatic extremes and supports them in rehydrating and regenerating their broader catchments.

The Mulloon Rehydration Initiative is an example catchment-scale project that aims to rebuild the natural landscape function of the Mulloon catchment and boost its resilience to climatic extremes for more reliable stream flows, improved ecosystem functioning and enhanced agricultural productivity.

The Mulloon Rehydration Initiative is a model for landscape scale repair across Australia. The results of the project reflect healthier landscapes and the production of high quality, nutrient dense food.



Land restoration by Mulloon Institute. (<https://themullooninstitute.org/projects>)

SOURCES:

- <https://www.westernsydneyparklands.com.au/places-to-go/urban-farms/>
- <https://www.murumittigar.com.au/>
- <https://riverstonefishfarm.com.au/>
- <https://www.dpi.nsw.gov.au/about-us/science-and-research/centres/ema/our-facilities-and-services>
- <https://hillbillycider.com.au/about/http://fernhillstate.cve.io/the-estate>
- <https://www.westernsydneyparklands.com.au/about-us/fernhill-estate/fernhill-estate-environment-program/>
- <https://harvestfarms.com.au/#about>
- <https://wildcatcentre.org.au/https://www.belgennyfarm.com.au/https://www.sport.nsw.gov.au/regattacentre>
- <https://www.dryridge.com.au/>
- <https://www.westernsydney.edu.au/nvpcc>
- <https://www.loganbrae.com.au/>
- www.harvesttrailsandmarkets.com.au
- <https://treetopsadventure.com.au/location/nsw-western-sydney/https://themullooninstitute.org/projects>
- Project Working Groups- Western Sydney Planning partnership MRA project 2022-23
- Australian Government (2022) Australia State of the Environment 2021 <https://soe.dccew.gov.au>
- CSIRO (2022) Our Future World
- WSROC, (2021), *Urban Heat Planning Toolkit*, <https://wsroc.com.au/media-a-resources/reports?task=download.send&id=306&catid=3&m=0>
- Misha Ketchell, (2022), *Sydney's dams may be almost full- but don't relax, because drought will come again*, [Sydney's dams may be almost full – but don't relax, because drought will come again \(theconversation.com\)](https://theconversation.com/sydney-s-dams-may-be-almost-full-but-don-t-relax-because-drought-will-come-again)
- Penrith City Council, (2015), *Cooling the City Strategy*, https://www.penrithcity.nsw.gov.au/images/documents/waste-environment/sustainability/Cooling_The_City_Strategy.pdf
- Guardian Australia (2021), Western Sydney more susceptible to 'economic scarring' post-lockdown experts say, <https://www.theguardian.com/australia-news/2021/nov/22/western-sydney-more-susceptible-to-economic-scarring-post-lockdown-experts-say>
- <https://7news.com.au/news/nsw/no-power-shin-high-water-and-a-100000-bill-what-its-like-when-flooding-becomes-the-new-normal-c-7433946><https://www.nsw.gov.au/nsw-government/projects-and-initiatives/floodinginquiry>
- <https://knowledge.aidr.org.au/resources/black-summer-bushfires-nsw-2019-20/> Mostafa Rachwani, (2021), *'Extremely dangerous': how much of the heat can Western Sydney bear?* <https://www.theguardian.com/australia-news/2021/mar/08/extremely-dangerous-how-much-of-the-heat-can-westernsydneybear#:~:text=That%20can%20mean%20extreme%20temperatures,80%20years%2C%20at%2047.3C.>
- <https://www.sydney.edu.au/news-opinion/news/2020/01/08/australian-bushfires-more-than-one-billion-animals-impacted.html>
- NSW DPI, (2019), *NSW State Seasonal Update- December 2019*, <https://www.dpi.nsw.gov.au/climate-landing/ssu/december-2019>
- <https://www.planning.nsw.gov.au/Plans-for-your-area/Priority-Growth-Areas-and-Precincts/Western-Sydney-Aerotropolis/Western-Sydney-Aerotropolis-explained>