

GREAT *for the* STATE

BUSINESSNEWS

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EDITION 7

12-PAGE LIFTOUT

NATURAL RESOURCES

How do we make the most of our coast?

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Partners



Scarborough Beach
Perth

Photo:
Gabriel Oliveira

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entrepreneurs

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creating opportunity

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EDITION 7

Natural resources

From our beaches to our mine sites, natural resources are at the centre of WA life.

OUR PARTNERS – HELPING US SHAPE GREAT FOR THE STATE

Trevor Hart

Global Mining Leader
KPMG



Western Australia's supply of natural resources is the reason our nation is experiencing its first period of trade surplus since 1975. It's a rare outcome in these days of global economic challenge, but we cannot take this position for granted. We must continue to invest and innovate in the sector to sustain our state's growth and future. Renewable energy is but one example of an increasingly diverse and talented WA that demonstrates the opportunities our natural resources provide to attract skilled people to the sector and build beyond our natural strengths.

(See page 6) ■

Rob Slocombe

Group CEO
RAC
Photo: LILA PHOTO



While the oil and gas and mining industries will remain the drivers of WA's economy for years to come, it is the unique WA destinations at the heart and soul of our tourism sector that we should embrace. Tourism is an important and growing economic contributor, as well as one of our most precious natural resources to be preserved, celebrated and experienced.

(See page 7) ■

Professor Peter Veth

Director
UWA Oceans Institute



It's not just land-based minerals and energy that this state has in abundance. Our oceans hold immense potential. Rich in biodiversity, energy and food, they provide us with unparalleled opportunities; but with these opportunities come great responsibility.

The University of Western Australia's Oceans Institute is bringing together the collective strength of UWA's best and brightest marine researchers in multidisciplinary, integrated teams across oceanography, ecology, engineering, resource management, social sciences and governance.

With the university well positioned on the Indian Ocean Rim and host to some of the strongest marine research partnerships in the country, the UWA Oceans Institute is working to harness the huge potential and opportunities that this natural resource has to offer.

(See page 9) ■

Professor Peter Leedman

Director
Harry Perkins Institute of
Medical Research



Plants and minerals, even marine life, are the natural resources that have been long-valued in medicine. Indigenous, eastern and western peoples have used them for thousands of years. Indigenous Australians were brewing tea from the tea tree as a remedy for sore throats and using the oil as an antiseptic well before pharmaceutical companies manufactured equivalents. In Egypt, a medical text believed to be written in about 1500BC described a wide range of herb and mineral based medicines for the treatment of various ailments. From the discovery in the 1700s that fresh fruit, particularly lemon juice, could help cure scurvy, which was the blight of many 18th century sailors, to the use of poppies to make codeine today, our natural resources have provided essential drug ingredients. Now innovative research is testing new frontiers using natural resources for the next generation of potential treatments.

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GREAT for the STATE

Future editions

Generosity and giving
October 21

Time and place
November 18

Cultural growth
December 16



SANCTUARY

Rae Kolb and other
volunteers keep
WA's beaches
beautiful.

Coast, river resources to respect and enjoy

Perth is blessed with world-class beaches and the iconic Swan River, but the city is still exploring how best to activate and protect these locations.

Story by **Matt McKenzie** Photos by **Gabriel Oliveira**

Rae Kolb will be a familiar sight for many of Perth's early risers.

A long-time conservation campaigner, Ms Kolb and the team from **Stirling Natural Environment Coastcare** are hard at work at morning every Tuesday, rehabilitating coastal dunes on Perth's northern beaches.

Ms Kolb's interest in protecting the natural environment started about 50 years ago on a trip to Sydney, where she noticed degradation on the beaches.

In the 1970s, she campaigned against the development of Star Swamp Bushland near Trigg.

Now, Ms Kolb is devoting her time to removing weeds on the sand dunes, replacing them with native vegetation.

"The coast is the longest piece of natu-

ral area connectivity that we've got in the whole metropolitan area," Ms Kolb told *Business News*.

"For as long as possible, we need to keep this thin line of biodiversity."

She said it was important for young people to connect with nature, whether at the beach or in bushland areas.

Ms Kolb, 79, is one of about 80 people in the north metropolitan area volunteering in organisations to protect the coastline, with other groups including **Cambridge Coastcare** and **Cottesloe Coastcare**.

The work of these organisations is supported by the state government, with programs including the Coastwest grants, through which \$375,000 was distributed for 20 projects in the 2019 financial year.

Continued on **page 4**

"Without volunteers it wouldn't be managed at the level it is currently managed," Ms Kolb said.

"The city wouldn't be able to manage it.

"There's so many diverse priorities that a city has to manage, and the coast is so needy."

Stirling Natural Environment Coastcare's work will be highlighted at the International Union for Conservation of Nature later this year for best practice, the organisation said.

Kate Sputore, who is coastal and marine program manager at sustainability organisation **Perth NRM**, told *Business News* there was a long-term possibility that beaches would be lost through erosion and dune movement if they were not carefully managed.

"We're losing beaches anyway," Ms Sputore said.

"We're losing some parts because we're losing sand.

"But we'd start to lose those actual beaches."

She said many dune systems were degraded, with no native vegetation on them.

"Native vegetation helps to stabilise dune systems and keep beaches intact," Ms Sputore said.

"Dune environments are pretty dynamic anyway; they move a lot, but the plants definitely keep those dunes in place.

"Without them we'd have a lot of dune blowouts, sand blowing inland all the time."

There were many threats to coastal ecosystems, she said.

"What we've seen over the years is native vegetation on dune systems destroyed, replaced with weeds and inappropriate species, damage from foot traffic, people, dogs, infrastructure, buildings," Ms Sputore said.

"You've only got a really narrow strip between the water and housing, roads or public infrastructure, so it's fairly fragile."

Western Australia has more than 12,000 kilometres of coastline, according to Tourism WA.

Activation

Local and state politicians and the communities they serve have long been engaged in a difficult debate over how best to strike a balance between keeping beaches as natural sanctuaries and coastal activation through developments.

Beachside development has historically been unpopular in Perth, although there is gradual change.

A major recent project was at **Scarborough Beach**, where the Metropolitan Redevelopment Authority spent more than \$100 million.

The site features an amphitheatre, swimming pool, skate park and a hill for watching sunsets.

Private investors have followed suit, with at least \$5 million spent on nearby bars and cafes in the past two years.

The beachfront is used for Fringe World events, dance nights and markets.

There are more coastal developments on the way, including LandCorp's **Ocean Reef Marina**, and redevelopment of the **Indiana Tea House** in Cottesloe led by Andrew Forrest's Minderoo Foundation.

City of Joondalup Mayor **Albert Jacob** has been advocating for the Ocean Reef development for most of his public life.

"Coastal activation is important to me," Mr Jacob said.

"There's a whole social side around the coast, and if we don't activate our coastal areas, (people will meet up) in shopping centres."

He said the marina would include about 1,000 dwellings and a boat pen, with boating a popular recreation activity in the northern suburbs.

In addition, there are plans to activate other locations, such as at **Burns Beach foreshore** and **Pinnaroo Point**.

"We ran a bit of an experiment last year ... (we ran) a night food market at Burns Beach," Mr Jacob said.

"We never had less than 2,500 people rock up a night; we ran that every Wednesday night throughout summer.

"There's clearly a community appetite to activate our coast better, and as a gathering place."

He said nearby **Hillarys Boat Harbour** was the second most popular tourism destination outside the city, after Rottnest Island.

Committee for Perth chief executive **Marion Fulker** said Hillarys was a great ex-

ample of a successful coastal development and one of Perth's most visited places.

But 30 years ago, Ms Fulker said, people had been lying down in front of bulldozers to stop it.

She also said the Scarborough redevelopment had been a huge success.

Cottesloe does not fare as well by comparison.

"It deserves more," Ms Fulker said, adding that it was like a museum, remaining as it was 50 years ago.

"When you look at the built form around Cottesloe, it's old fashioned and out of date."

She acknowledged the importance of getting the right balance, however.

Ms Fulker told *Business News* that Committee for Perth surveys of residents and potential visitors had found the city's natural beauty was a key quality that made it unique.

The best activation of beaches or other places would need to be accessible to everyone, not just cut off for private uses, she said.

ABN Group managing director **Dale Alcock** is hoping to ignite more conversation around how best to harness the city's natural beauty and other unique characteristics.

"I'm a resident of Perth, I love Perth, I'm a business person second. I want us to have

the best possible city and environment going forward," Mr Alcock said.

Areas near the Fremantle rail line, on Stirling Highway and near beaches would be perfect for building vibrant, denser communities, he said.

"Greater densification brings amenity with it as well," Mr Alcock said.

"If we like the idea that there's a coffee shop on the corner, or a little local bar or craft brewery... all of these things come as a result of having density."

Leighton Beach was an example of a compromise outcome that should be avoided, he suggested.

"The development at Leighton Beach doesn't attach itself to anything, it sits there isolated," Mr Alcock said.

"That outcome is the result of a protest, the original master plan was pulled back dramatically.

"If you jump on the train at Cottesloe and go to Fremantle, the train goes through a wasteland there. That could be so much better."

Mr Alcock was not just focused on the western suburbs, however.

He said activating beaches should be considered all along the metropolitan coastline.

There's clearly a community appetite to activate our coast better, and as a gathering place

-Albert Jacob

"It would be a nice proposition to be able to watch the sunset sitting on the beach on a deck, seasonal pop-up cafes, wine, a craft beer, a light meal and watch the sun go down," Mr Alcock said.

The Swan River

Mr Alcock also offered support for a recent proposal by GroupGSA architects for a swimming pool on a barge off **Elizabeth Quay** in the Swan River.

The concept would have low cost, low impact and high amenity, he said.

Committee for Perth's Ms Fulker said the community should consider how to make the most of the Swan River.

"The access to the river, you've got to have a boat or be taking a ferry," she said.

"If we want to have a more publicly accessible, available (river), you'd have a ferry system."

The existing system only includes trips from South Perth to the city and to the new stadium in Burswood, and could be expanded on, Ms Fulker said.

But for that to work, she said there would need to be density in nodes on the river.

There have historically been controversies about riverside development.

One example in Committee for Perth research was the **Raffles Waterfront De-**

velopment in Applecross, which was completed in 2006, more than a decade after a redevelopment proposal was put forward.

That initial proposal was met with criticism partly because of plans to demolish the hotel, built in the 1850s and later renovated (1937) in art deco style reminiscent of its namesake in Singapore.

A Multiplex proposal for a 17-storey building attracted 1,216 public submissions, with only 40 approving of the height.

The development of the **Old Swan Brewery** site was an even longer process, starting in 1985 and completed in 2001.

Local Aboriginal people, the RAC, the Kings Park board and the state opposition opposed the brewery rebuild, according to Committee for Perth research.

Quay project

The flagship riverside development in Perth in recent years has been Elizabeth Quay, which was officially opened in 2016.

In the year that followed, there were about 6.6 million visits to the quay, the state government claims, and it also won the Urban Development Institute of Australia's award in 2018 for best urban renewal.

Elizabeth Quay has since hosted events as part of Fringe Festival, the Perth International Arts Festival and the Australian Arcadia Spectacular show.

As with many proposed foreshore developments Elizabeth Quay faced vocal opposition, and its construction and completion marked a near 40-year period of discussion and debate about how best to use the area and link the city to the river.

Former premier Colin Barnett, who drove the development, said at the time that the city had become disconnected from the river, particularly because of the freeway interchange at the western end.

A report by Deloitte Access Economics estimated Elizabeth Quay would contribute \$637 million to the state's gross domestic product in the decade after it opened. ■

HIGHLIGHTS

(Clockwise, from top left) Scarborough Beach was recently redeveloped; the tea rooms at Cottesloe Beach are world famous; Elizabeth Quay is where the city meets the river; Hillarys Boat Harbour was controversial when first built.



Resources leaders who built WA

Story by **Matt McKenzie** Photos supplied by **Mannkal Economic Education Foundation**



Lang Hancock

Legend has it that Lang Hancock discovered iron ore while flying a plane through Turner River Gorge in the Pilbara.

But Mr Hancock's efforts extend beyond mere chance.

He successfully lobbied to lift the federal government's embargo on iron ore exports,

and the state government's ban on pegging of prospects.

Those two contributions set the stage for Western Australia to be an iron ore superpower.

Mr Hancock was a key dealmaker in the industry, including working with Peter Wright and Rio Tinto to

build the first iron ore mine in WA.

However, there was controversy about his earlier work founding a blue asbestos mine in Wittenoom.

Alan Bond

England-born Alan Bond was a high-profile businessman who served time in jail in the 1990s after his Bond Corporation collapsed.

Despite the controversies, one series of deals changed the face of Kalgoorlie.

In 1988, Bond took control of the tenements on the Golden Mile and created the famous Super Pit.

Underground mining operations were phased out, and the pit became perhaps the best-known gold mine in the world, eventually reaching 3.5 kilometres long, 1.5km kilometres wide and 600 metres deep.

The Super Pit has produced about 20 million ounces of gold during its operational life.

CY O'Connor

Irish engineer Charles O'Connor was a visionary, developing two major projects that enabled the resources industry in WA – Fremantle Harbour and the Goldfields Water Supply Scheme.

On the port, Mr O'Connor succeeded against previous advice that the location, at the entrance to the Swan River, would be impossible to use.

The pipeline was constructed despite considerable opposition in the media and from politicians, and allegations against Mr O'Connor personally. The 530-kilometre pipeline has eight pumping stations, and opened up the state's Goldfields to development.

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WA Natural Resources - take nothing for granted

How does one discuss the obvious to a readership that understands our State so well? I'm an accountant – an auditor in fact, who lives by the adage, "Don't tell me – show me." So, I went to the data.

Today, Australia is enjoying a trade surplus - a rare outcome in these days of global economic challenge. In the July quarter, Western Australia's exports grew to almost \$49 billion, representing 47% of the nation. Our trade surplus for the fiscal year was \$134 billion. Yet, the nation's surplus for the same period was \$70billion. Yes, without WA, the nation had a trade deficit of \$64billion!

It's WA's strategically important natural resources that underpin Australia's privileged position and relevance on the global stage.

There are about 2.6 million people in WA. In theory, we each have one square kilometre of WA to ourselves! It is a small population for such a large state, rich with natural resources which presents a huge opportunity in itself. An opportunity to attract skilled people and to build beyond our natural strengths.

Fortunately, the wave of technology, disruption and a focus on the environment has started to take effect, and WA is primed to capitalise on our world-class mining, energy and agriculture expertise. The "cleaner energy boom" is charging a renewable resources and battery storage agenda, triggering a hive of activity in the state.

Last month, soil was struck in the

agricultural area of Dandaragan, marking the start of the Yandin Wind Farm, which is set to feed renewable energy into WA's electricity network by late 2020. In July, the McGowan Government announced a \$10 million Renewable Hydrogen Fund and the release of a new hydrogen strategy. This coincided with the opening of the Clean Energy Innovation Hub in Jandakot, which examines hydrogen as a future balancing fuel to support WA's electricity grid. Also in the pipeline is a massive clean energy project planned for the Pilbara to supply local needs and fuel a manufacturing hub for the export of clean hydrogen.

A growing shift incorporating renewables into the energy mix is also seen in WA's mining sector. The solar project powering the DeGrussa Copper Mine near Meekatharra is a leading example, as is the nearby construction at the Agnew Gold Mine of a hybrid facility encompassing wind, solar, battery and gas set to deliver half the operation's energy needs.

Renewable energy is but one example of an increasingly diverse and talented WA that demonstrates the opportunities our natural resources provide. However, we can't take this for granted. We need skilled people, the right policies and collaboration to increase the sustainment of our great State and preserve our ability to bring influence to the world well beyond the 2.6 million people we represent.

Trevor Hart
Global Mining Leader, KPMG



Harnessing the enormous mineral and petroleum wealth of WA required leaders willing to drive innovation and take risks. We profile seven of the most important.

Charles Copeman

When WA’s iron ore mining industry was on the verge of crumbling from industrial relations pressure in the mid 1980s, Charles Copeman stood up against vmilitant unions and set the sector up to be the nation’s breadwinner. As chief executive of Peko Wallsend, which held a third of the Robe River iron operation,

Mr Copeman took the mine from a money loser to profit, with productivity trebling. Mr Copeman sacked 1,100 workers, re-hiring half in a move opposed by state and federal Labor governments at the time. The drastic action helped achieve a better balance between worker output and compensation structures.



Geoff Donaldson

In 28 years as chairman of Woodside Petroleum, Geoff Donaldson led the company that developed what was at the time Australia’s largest ever private investment – the North West Shelf Venture. Mr Donaldson was famously effective in finding capital to keep the-then small listed company afloat from the start of his tenure in 1956. Woodside discovered the North Rankin field in 1971. In the 1980s, Woodside signed on eight Japanese customers to offtake gas from North West Shelf, and worked with Shell to raise money from international banks for the project. The final investment decision for the first two LNG trains was made in 1985, not long after he retired in 1984.

Sir Charles Court

As WA premier from 1974 to 1982, and as an influential minister for a decade prior to that, Charles Court was vital in the development of the iron ore, bauxite, mineral sands and LNG industries. Sir Charles was behind the deal that underpinned the North West Shelf Venture gas development, a domestic gas offtake which lasted 30 years. He also negotiated to ensure WA would keep most of the royalties from the project, and built the gas pipeline from Dampier to Bunbury. The state agreements for the Pinjarra alumina refinery, Argyle diamond mine, Robe River iron ore and Hamersley Range iron ore mines are among those that bear his name.

Sir Arvi Parbo

Estonian immigrant and WWII refugee Arvi Parbo held leadership roles in some of the most important mining companies in WA’s development, including Western Mining Corporation, BHP and Alcoa of Australia. Early in his career, Sir Arvi played a key role in the development of bauxite resources in Darling Range, working with Alcoa representatives to study feasibility of the project. He was part of the WA team that inked the deal with US company Alcoa to create the local alumina industry. His next big role was in nickel, where he worked on the construction of the Kambalda nickel mine and processing plant. ■

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Exploring WA’s greatest natural resources

The travel destinations scattered across our great State are large in number and diversity and offer locals and visitors some of the most captivating experiences anywhere in the world. It is this commodity – one of culture and community – which is one of our most precious natural resources. Tourism is a significant industry for Western Australia, employing thousands of people and driving infrastructure spend and trade success. Figures released earlier this year by Tourism Research Australia showed intrastate visitor numbers had reached a four-year high – more and more people are choosing to holiday at home. Interstate visitation was also on the rise, with WA seeing the highest growth in the country for tourists visiting from other States and territories. RAC has a long history in travel. As early as 1911, our founding members helped install some of the State’s first signposts and created our first roadmaps. Fast

forward more than a century and tourism remains a priority for RAC, with a key focus being the promotion of travel to quintessential WA destinations. Over recent years RAC has significantly invested in tourism to showcase the wonders of Western Australia with the most recent addition of RAC Cable Beach Resort in December 2018. RAC now offers our members and the community access to eight iconic destinations. As part of each new purchase, upgrade or refurbishment we embark on, we consider what improvements can be made while preserving the history and natural beauty of each location. We are proud our tourism strategy is enabling our members, all Western Australians, and indeed more interstate and overseas visitors, the opportunity to discover what makes our State so unforgettable. With more than 2.5 million square kilometres of Western

RAC Parks and Resorts
RAC Busselton Holiday Park
RAC Cable Beach Holiday Park
RAC Cervantes Holiday Park
RAC Exmouth Cape Holiday Park
RAC Karri Valley Resort
RAC Margaret River Nature Park
RAC Monkey Mia Dolphin Resort
Ningaloo Reef Resort

Australia to explore, our hope is the boundless experiences dotted along our coastline and nestled among our bushland are enjoyed by as many people as possible. Whether Exmouth or Esperance, Broome or Busselton, RAC is proud to support and embrace tourism across our State. The future is bright, and our State has so much opportunity. Rob Slocombe Group CEO, RAC



RAC Monkey Mia Dolphin Resort

Producing at their peak

Duke Ranson looked at about 100 parcels of land before deciding on the perfect place for Duke's Vineyard winery, an endeavour that's paying dividends.

Story by Matt McKenzie

14%

Proportion of WA-produced wine that's exported

CHEERS Wineries export about \$65 million of product annually. Photo: Tourism Western Australia

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Duke's Vineyard owner Duke Ranson credits the taste of the business's award-winning wines to the exceptional characteristics of the Great Southern location.

The vineyard's Magpie Hill Reserve Riesling won Halliday's best Australian wine in 2019, the first white wine to achieve the award.

"It's the location," Mr Ranson told *Business News*.

"We're in Porongurup.

"Porongurup has something special, no-one quite knows what it is. It has a cool climate, it's elevated, it has reasonably reliable rainfall.

"It's the only place in the world that I know of where you can grow cabernet and riesling in the same paddock and produce sensationally good wines from both varieties."

Mr Ranson said there was a lot of luck in getting the right location, but hard work was also necessary, which meant a lot of homework on the soils and topography.

First seeds were planted in 1999 and the first vintage sold two years later.

Now on the 19th vintage, the winery is still very small, selling only about 6,000 boxes of a dozen bottles in a year.

But they sell quickly, particularly after the Halliday's win, Mr Ranson said.

Duke's has a somewhat traditional approach to marketing its product.

Mr Ranson said the vineyard did not export, with about 60 per cent of orders coming through the winery's quarterly newsletter.

And there was a big focus on building customer relationships.

"The biggest single problem for small wineries is marketing, without question," Mr Ranson said.

"There are a lot of sheds around the countryside that are full of dreams and aspirations sitting in bottles and cardboard.

"It's easy to grow, easy to make, but devilishly difficult to sell it."

There's one more key factor Mr Ranson credits.

"Along with growing the best fruit we can probably grow, we've got probably the best winemaker in the country, Robert Diletti," he said.

All up, Western Australian wineries exported about 9.6 million litres in 2018, worth about \$65 million.

That is out of about \$2.8 billion of national exports.

Most WA production actually stays in Australia, with only 14 per cent shipped overseas.

Tremendous truffles

The state's south is also a powerhouse in production of that pungent fungal delicacy, the truffle.

Truffle & Wine Co head of sales Alex Wilson told *Business News* the business couldn't produce enough to meet demand.

"The industry has evolved at a rapid, aggressive pace," Mr Wilson said.

"Manjimup and surrounding areas had the first trees on mainland Australia in 1997.

"(Now) Manjimup is 90 per cent of the Australian truffle industry."

The Truffle & Wine Co was responsible for about a third of the total, he said, with production between 15 and 20 tonnes Australia wide.

The fungi retail for up to \$2,500 per kilogram, with the company shipping to about 31 countries.

What's really impressive about WA's truffle industry, however, is the level of technical knowledge that goes into perfecting the product.

"You have some of the most entrepreneurial, lateral thinking, problem-solving farmers in the world here [in the South West]" Mr Wilson said.

"When you get a truffle-inocu-



PREMIER Truffle & Wine Co sales and marketing officer Ben Verall (left), and Alex Wilson. Photo: Truffle & Wine Co

lated tree, it's from a nursery that's multi-generational ... some of the world's best nurserymen.

"Manjimup (has) the best tree people."

The karri loam soil was also excellent, he said, with farmers making adjustments to make it perfect for truffle growing.

Third, farmers were blessed with abundant fresh water.

"We use all kinds of technology and lab testing to test the leaves, test the soil, we do nutrition programs, pesticides, herbicides ... there's all kinds of things that we tweak," Mr Wilson said.

"Because this is a premium and

high-volume food production area.

"Everyone here is at their absolute best, the pinnacle of their game."

The business was also focused on value adding opportunities for lower-grade truffles.

That included working with a Chicago brewery, Moody Tongue, which produces the world's most expensive beer – a truffle-infused pilsner Mr Wilson said sells for \$US120 per bottle.

Closer to home, the company works with Blackwood Valley Brewing on truffle ales and ciders. ■

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Harnessing the power of our oceans



It's not just land-based minerals and energy that this State has in abundance. Our oceans support a unique range of biodiversity, energy, food and cultural assets that provide Western Australia with unparalleled opportunities as well as great responsibilities.

The University of Western Australia is located on the rim of the Indian Ocean, which covers a staggering 20 per cent of

the Earth's surface. We are committed to projects that use the full breadth of our interdisciplinary skills, working in collaboration with industry, government and the community.

The UWA 2030 vision named the oceans and the marine environment as one of its 'Grand Challenges', with the University's Oceans Institute positioned and resourced to provide the

lead in focusing on this important area.

The Institute brings together the collective strength of UWA's best and brightest marine researchers in multi-disciplinary, integrated teams across oceanography, ecology, engineering, resource management, social sciences and governance.

Outstanding early career researchers come to UWA to engage in cutting-edge research, directed by experienced mentors, in areas as varied as fisheries science, off-shore engineering, economic modelling, conservation management, sea mammal tracking and maritime archaeology.

Whether it is the study of energy from the oceans, productive ports, coastal hazards or marine biology, UWA hosts some of the strongest marine research partnerships in the country.

The numerous facilities on campus and partner programs supported by UWA provide industry, government and community with direct access to national capabilities. These include integrated marine observation tools (subsea gliders, surface current radars, oceanographic profiling floats supported through Federal and WA State Government funding to Australia's Integrated

Marine Observing System), geotechnical centrifuges, advanced geochemical characterisation laboratories and teams using big data science in fisheries and marine conservation.

UWA faculties lead the Indian Ocean node of the global 'Sea Around Us' project that tracks the effects of fisheries on marine ecosystems globally. Partnerships with institutes and universities on the Indian Ocean Rim provide two-way exchanges of expertise and people.

The Oceans Institute has an expanding membership of highly skilled people who bring together the practical and industry-proven research skills needed to address both mainstream and unexpected tasks and problems. The Institute and its partners are ready to meet the grand challenges of the coming century.

Professor Peter Veth
Director
UWA Oceans Institute

29%

**Resources sector share of
annual income generated in WA**

DIG IT BHP's iron ore mines
support about 10,000 jobs.
Photo: Gabriel Oliveira

Mining, energy benefits widespread

Story by **Matt McKenzie**

OUTPUT Petroleum is worth
\$35 billion to WA annually.
Photo: Woodside Petroleum

WA's resources industry has business and community benefits that reach far beyond the export dollars they earn.

Fortunes have been made, communities built, knowledge unlocked and opportunities created by Western Australia's resources bounty.

Many of the state's high-profile business people are connected to the phenomenal wealth creation associated with mining and energy, Andrew Forrest and Gina Rinehart among them.

They motivate teams, take risks, and innovate.

But mining and energy create opportunity and bring benefits across the economy.

For **Norwest Group**, based in the Pilbara town of Wickham, it was iron ore that gave the business a big break.

The contractor was founded by Kim North and Kathy Goodin about 25 years ago, with a small truck and a bobcat.

Norwest general manager David Ness told *Business News* the company now employed 30 people and had 70 pieces of machinery.

"Kim got involved with working for the resources companies, Robe River, which developed the iron ore mines at Pannawonica and the rail line out to Cape Lambert, which is near where we're based," Mr Ness said.

"They needed a local contractor to come and do bits and pieces for them, he built the business on that."

The company still works with Rio Tinto, alongside other clients such as Main Roads.

Building a contracting business through resources work is a quintessentially WA story.

Among the best-known is **Clough**, which was founded in 1919 and initially built schools, and residential and commercial buildings.

Harold Clough joined the family business in 1954 and the company grew through involvement in the resources sector.

The first mining contract was in 1965 with Hamersley Iron, in a joint venture with Harbourworks, building a materials-handling facility.

That was followed by work on the Barrow Island oilfield in 1966, at North Rankin A in 1981, and on the North West Shelf Venture LNG jetty in 1983.

By 1990, the business employed 4,000 people across

Australia and through operations in other countries. Its latest win was on the Kitimat LNG project in Canada.

A more recent example is Henderson-based **Civmec**, which was founded in 2009.

Civmec won packages for construction work at **Chevron's** Gorgon and Wheatstone projects, and more recently has taken that offshore knowledge to apply to building naval vessels through a partnership with German business Luerksen.

The numbers

In the five financial years to 2018, mining and petroleum production in WA was worth about \$535.8 billion, according to the state government.

lion); and tin, tantalum and lithium (\$1.6 billion).

About 112,000 people are employed by the state's resources businesses according to the state government, roughly 10 per cent of WA's workforce.

Community

In the town of Onslow in the Pilbara, US-based gas producer **Chevron** spent about \$250 million on local infrastructure near its Wheatstone LNG facility.

That included an airport, which opened in 2015, a pool, a redevelopment of the hospital, and 50 new homes.

The company also financially supported the construction of a new power microgrid in Onslow, heavily using renewables.

Lots of overseas people with a background in offshore engineering have come to Perth ... and that talent pool is still here

-Afton Galbraith

Each year, the resources sector creates about 29 per cent of the income generated in the state.

With production of \$64 billion in the 2018 financial year, iron ore is the most substantial commodity.

To put some perspective around the significance of that number, that's about 67 times what the roughly 950,000 international visitors to WA spent in the year to March.

The iron ore industry will last generations.

Australia's proven and probable reserves of iron ore stood at 23.5 billion tonnes as at 2016, according to Geoscience Australia, almost all of it in WA.

Those reserves will last more than a quarter of a century, with exploration able to firm up further opportunities.

BHP, for example, recently secured environmental approval for a mine plan to last between 50 and 100 years.

The other big commodities produced in WA are: petroleum products (\$35.5 billion); gold (\$11.5 billion); alumina and bauxite (\$7.9 billion); nickel (\$3.1 bil-

lion); and tin, tantalum and lithium (\$1.6 billion).

Shire of Ashburton president Kerry White said the oil and gas development had been very important for the local community.

"Before **Chevron**, we wouldn't have had a swimming pool, we wouldn't have had an airport, a new sports club," Ms White said.

"BHP supplied us with a skate park and basketball courts."

Mining businesses in particular provide benefits for indigenous Australians.

BHP employs 1,168 indigenous people across the country, making up about 5 per cent of the company's workforce.

The company signed a 100-year agreement with the **Banjima Native Title Aboriginal Corporation** in 2015, covering an area of more than 8,000 square kilometres, in a deal reported at the time to be worth hundreds of millions for the local people.

The following year, **Rio Tinto** signed an agreement with the **Banjima** people, after 10 years of negotiations.

Royalties from these operations support the corporation to deliver a range of services for

local people, including covering travel assistance and costs for medical services, day care, car repairs, clothing and mobile housing.

There are other tangible community benefits from mining.

Fortescue Metals Group, for example, has funded scholarships for school students through the **Yamatji Marlpa Aboriginal Corporation**.

The company has also operated the Vocational Training and Employment Centre program to support training for indigenous people in locations such as South Hedland and Roebourne.

That program has assisted nearly 800 people, **Fortescue** said.

Then there are contracts for indigenous businesses.

About three years ago, the business started operating in Poland and working in the European market.

"That was using local oil and gas knowledge for new clients in Europe," Mr Galbraith said.

"This is a knowledge base that exists in Perth, Houston and Aberdeen as the main centres.

"For offshore subsea pipelines, Perth is one of the best places in the world.

"We've had a large number of offshore projects over the past 20 years that are very technically challenging.

"Lots of overseas people with a background in offshore engineering have come to Perth ... and that talent pool is still here.

"That talent set has grown over the past 15, 20 years, and now it's some of the best."

Mr Galbraith said he was particularly proud of the company's automated engineering assessment software, which enabled computers to perform manual tasks, freeing up engineering talent to optimise projects and look for solutions.

Woodside and **Chevron** in particular had helped promote the company in overseas markets, Mr Galbraith said.

Several WA businesses have taken technology developed through local resources work and made an impact overseas.

DownUnder GeoSolutions started in a Subiaco backyard 15 years ago and now has four offices across the globe and a suite of supercomputers for analysing geoscience data, while Osborne Park-based **Immersive Technologies** has developed training simulators for the mining industry that are used in 44 countries.

Sapien Cyber has received support from **Woodside Petroleum** for its cyber security product, with the oil and gas major taking a 10 per cent stake in the business in March.

Sapien deputy chair John Poynton told *Business News* **Woodside** had been a strong advocate for the business, and had been a key client.

For the next round of resources technology businesses, there's an ecosystem including Spacecubed's **Core Resources Hub**, and the **Unearthed Hackathon** program. ■

Fortescue has awarded about \$2.3 billion of contracts to Aboriginal businesses, the company said.

Wirlu-murra Yindjibarndi Aboriginal Corporation, which won \$179 million of contracts from **Fortescue** earlier this year, uses the income to support community services.

Fortescue has underwritten loans to help the corporation grow and helped build capacity by supporting **Wirlu-murra** in joint ventures with other suppliers.

Knowledge economy

Perth-based **Subsea Engineering Associates** is an example of a local business that has taken the expertise generated through work in the resources industry to overseas markets.

The company was founded in 2009, specialising in offshore oil and gas engineering, and now has more than 50 staff, according to managing director Afton Galbraith.

Nature does the business

Story by **Matt McKenzie**
Photo by **Gabriel Oliveira**

PASSION Peter Buckman volunteers in Kings Park to keep the gardens looking their best.

Peter Buckman says he loves his work with the Friends of Kings Park because he can see the positive impact of his efforts.

Mr Buckman is one of about 25 volunteers who regularly meet at Kings Park to keep the gardens looking world class.

"(We're) conscious of the status of the park in tourism terms,

in botanical garden terms, it's known around the world," Mr Buckman told *Business News*.

"It's the most visited site in Perth."

In the 2018 financial year, the park reported 5.4 million visitors, with 78 per cent being locals and 12 percent from overseas.

At a little more than four square kilometres (400 hectares), Kings

Park is larger even than the famous Central Park in New York City.

Mr Buckman has been involved in protecting the park for 10 years, but his interest has been long held, including during his time as the state's chief veterinary officer.

"We used to take our kids to Kings Park," he said.

"Whenever we had visitors, we'd always take them to Kings Park.

"And I'd be wanting to pick some weeds out because it was making the place untidy.

"I love it just as much now as I ever did.

"I enjoy being in Kings Park in the gardens.

"It's an extraordinarily peaceful place to be, even though it's in the middle of the city."

Another destination that attracts many visitors is Rottnest Island. It had 734,637 visitors in the 2018 financial year, with the island's authority targeting 800,000 people by 2034.

A popular attraction there are the quokkas, with about 7,400 #quokkaselfies taken with the marsupials in the 2018 financial year, nearly one for each quokka on the island.

That free branding is magnified by celebrities such as actress Margot Robbie, whose selfie scored nearly 2 million likes.

Whales and dolphins are also popular with tourists.

Nearly 35,000 humpback whales use the Camden Sound Marine Park, in the Kimberley, as a breeding ground every year, making it possibly the most important humpback breeding ground in the Southern Hemisphere.

On land, Hutt Lagoon near

WA's natural attractions

- Kings Park
- The Pinnacles
- Spencer Lake & Hutt Lagoon
- Ningaloo Reef
- Monkey Mia
- Whales
- Cable Beach
- Wildflowers
- Rottnest Island

Kalbarri, and Spencer Lake, close to Esperance, are becoming increasingly popular.

High salinity gives the lakes a colour that varies between pink, red and purple.

Major advertisements for the Kia car company and Myer department store, as well as a South Korean pop music video, helped raise the sites' profile. ■

SPONSORED CONTENT

Foxgloves for the heart

Cardio health from the garden

A common garden plant with purple, tubular bell-like flowers is a vital natural resource, that often goes unrecognised, but is responsible for extending the lives of many West Australians.

The humble foxglove is the source of the widely used heart drug, Digoxin. The drug is derived from the leaves of the plant and it helps make the heart beat more strongly and with a more regular rhythm.

Digoxin is used to treat patients with heart failure and patients with the fairly common condition, atrial fibrillation, a rhythm disorder of the upper chambers of the heart.

While Digoxin has been widely used since the 1970s, foxglove tea was first described in medical literature in 1785. It was used to treat 'dropsy' which was the general term for fluid retention.

Natural resources, both plant and marine life, have been part of Indigenous, Eastern and Western medicine for centuries and they remain widely used and provide a strong export market for Australia today.

Tasmanian opium poppy farms produce half of the world's legal supply of poppy straw that is refined into opiates such as morphine and codeine.

Australia and New Zealand's native Manuka tree is the natural resource being planted for the increased production of Manuka honey sold in chemists for its medicinal properties.

And innovative thinking at the Harry Perkins Institute of Medical Research has led to an investigation into the potential use of Perth honey bee venom to treat the most aggressive types of breast cancer.

The potential is immeasurable for our natural resources to provide the next compound that kills cancer cells or solves the growing global antibiotic resistance problem and WA has one of the world's rare jewels that could hold the key to an international breakthrough.

Western Australia's Southwest corner stretching from Shark Bay to Esperance has remarkable biodiversity. It is one of only 35 internationally recognised global hotspots for wildlife and plants.

The area is about the size of England but the contrast is stark. Where England has 1500 species of plants with 47 of them found nowhere else in the world, our Southwest has an astonishing 7,239 plant species and almost 80% are found nowhere else in the world.

Who knows what medicinal properties might exist in this rich biodiversity that are yet to be discovered?

The value of our rich natural resources goes far beyond mining and we have barely scratched the surface in harnessing the benefits that could be derived from our plant and animal biodiversity.