

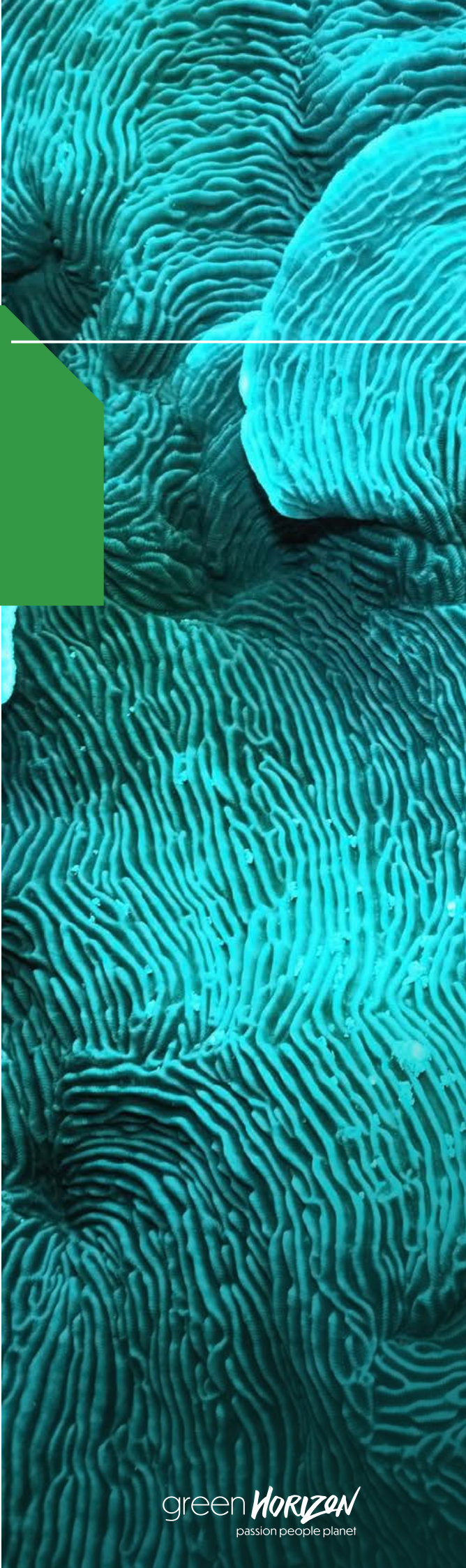
GREEN TALK:
**MAKING
A SPLASH**

The blue economy in 2024

Acknowledgement of Country

greenHorizon acknowledges the Traditional Custodians of the lands where we work and live. We celebrate the diversity of First Nations peoples and their ongoing cultures and connections to the lands and waters of NSW.

We pay our respects to Elders past and present and acknowledge the Aboriginal and Torres Strait Islander people who contributed to the development of this resource.



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Introduction

Rising ocean temperatures and sea levels. Acidification and coral reef bleaching. Declining sea ice and slowing ocean currents, over-fishing, industrial pollution and that vast amount of plastic waste... there's no doubt the Blue Planet's most precious resource is in crisis.

In 2024, you'd be forgiven for assuming development was a dirty word in marine conservation circles. But in the race to mitigate the effects of global warming and preserve or restore environments, the oceans make a special case for intervention and management for the common good. Yes, we will continue to draw upon their riches to sustain growing populations. But by doing this in innovative, sustainable ways, the benefits can flow not just to humanity – in the form of food, industry, jobs – but back to the oceans, improving the health of marine ecosystems.

It's called the blue economy, and after a slow start (UN Secretary-General António Guterres identified Sustainable Development Goal 14, "Life Below the Water", as the least funded SDGs), exciting work is being done in this space, from high-tech offshore aquaculture to renewable wave energy production and pay-it-forward tourism. With the world's third largest marine footprint, Australia is perfectly placed to set the waves in motion.

In this edition of Green Talk, the regular insights series from greenHorizon, we take a deep dive into five exciting blue industries of future and highlight some of the homegrown business champions leveraging science and technology to tackle the ocean's biggest issues. Finally, we outline what marketing and communications professionals can do to provide a powerful solution to transform ocean health.



Industries of the future: Seaweed aquaculture

The great thing about seaweed aquaculture? Done right, it's a win-win model. An industry with enormous potential for growth and commercial applications ranging from food to face cream to methane emissions reduction, it can also have a profoundly positive effect on marine ecosystems. Seaweed provides food and habitat for other aquatic life, reduces wave impacts and helps to clean and de-acidify oceans by absorbing nutrients and CO₂ via photosynthesis.

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The industry is still at hatchling stage in Australia, but the new Australian Sustainable Seaweed Alliance estimates that we have the ingredients for the creation of a \$1.5 billion industry and 9000 jobs within 20 years: abundant and diverse seaweed species in our waters, innovative businesses, cutting-edge science hubs and a population

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increasingly inclined to support sustainable farming and new ways to meet our greenhouse gas emissions targets.

While red seaweed (*Asparagopsis*) is the scarlet media star with its headline-grabbing powers to reduce methane emitting burps by sheep and cattle, other species of seaweed are the subject of intense R&D. Applications range from bio-plastic packaging and products to building materials, pharmaceuticals and bio-filters for the aquaculture of the future. Seaweed, the world is your oyster.



SNAPSHOT: SEA FOREST

seaforest.com.au

Australian eco-tech company Sea Forest is dedicated to fighting climate change one cow at a time. Its SeaFeed™ additive contains bioactive compounds that are found naturally in red seaweed (*Asparagopsis*); when fed to ruminant livestock, it can reduce methane emissions (which contribute a whopping 16% to global greenhouse emissions) by up to 80%. Could this help Australia meet its 2030 emissions target: a 43% reduction on 2005 GHG levels?

Sea Forest, which grows *Asparagopsis* on a 1800ha marine lease in southern Tasmania, is working to scale up commercial production of its feed additive and is now eyeing markets in the UK and Europe, where graziers are under increasing pressure over methane emissions. In the meantime, founder Sam Elsom is lobbying for carbon credits to be applied to SeaFeed, which would help absorb the cost for Australian farmers.



Industries of the future: Sustainable fishing

Climate change is having a profound impact on the ocean and all those who rely upon it for food and income, accelerating the imperative for our seafood industry to adopt sustainable fishing practices. They're integral to delivering SDG 14, which includes targets to end overfishing and protect and restore ecosystems.

The Marine Stewardship Council, an international labelling and certification program that engages more than 670 fisheries in 66 countries, acknowledges that wild fish and seafood are vital to the food security and livelihoods of hundreds of millions of people around the world.

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"Stopping fishing is not an option," it says, "but we know that the ocean's resources are finite and under threat." (Threats include one of the less obvious effects of global warming: the mass movement of species due to changes in water temperature, which could leave many coastal communities dependent on fishing high and dry.)

The MSC's job is to help manage these resources so that they remain available to future generations. Australia is ahead of global MSC targets, with more than 52% of fisheries certified and making

progress in reducing bycatch and impact on ecosystems, along with improvements in sustainable management. Many fisheries are not just compliant, they are actively collaborating with science and government, applying innovative technology to support sustainability and drive industry reform.

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SNAPSHOT: RARE FOODS AUSTRALIA

rarefoodsaustralia.com.au

In Augusta in the far south-west of WA, third-generation fisherman and commercial diver Brad Adams was alarmed about tightening quotas for indigenous greenlip abalone, but equally concerned about the declining wild stocks. How could he help maintain the viability of his abalone fishery while protecting the ocean environment he loved?

His lightbulb moment: why not try to replicate the abalone's natural environment? After seven years of experimentation and support from partners including the Fisheries Research and Development Corporation, the West Australian government and Curtin University, a world-first artificial abalone habitat was born.

ABITATs, which cover only 2% of Rare Foods Australia's 413ha lease area, now produce more than 25% of the world's wild and highly sought-after greenlip abalone. And Adams is the MSC's Sustainable Fishing Hero for 2023... and the largest employer in Augusta.



Industries of the future: Offshore wind energy

The International Energy Agency nominates offshore wind energy as one of the “big three” renewable electricity solutions to Earth’s climate woes, along with land-based wind and solar.

With no offshore wind farms, Australia drastically lags behind countries such as the UK, but watch this space. Dozens of projects are on the drawing board since the Australian Government established a regulatory framework and identified six priority zones, including the Southern Ocean (Vic, SA), Bass Strait, waters off the Hunter (NSW) and Gippsland (Vic).

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However, the Climate Council's vision – wind farms helping to drive the nation towards clean energy superpower status – will not be realised overnight, with potential projects scheduled to take at least 5-7 years and facing extensive regulatory and environmental hurdles. Case in point: in January, a Victorian proposal to build infrastructure at Port Hastings to support an array off Gippsland was vetoed by federal environment minister Tanya Plibersek

on environmental grounds. In the meantime, expect ongoing controversy as Australians choose sides in the clash between renewable energy projects, environmental and community concerns, all charged by political interests.

But let's give the final word here to a scientist. As renewable energy expert Dr Mark Diesendorf from the University of NSW told The Australian in January, wind farm impacts are negligible compared to those of coalmines and nuclear power plants. “There is not a shred of scientific evidence,” Dr Diesendorf added, “that whales are affected at all by offshore wind farms.”



SNAPSHOT: OCEANEX

oceanexenergy.com

Australian company Oceanex Energy proposes to build up to four offshore wind farms in Australian waters, which it says will provide clean, reliable electricity on a large scale plus bring investment, jobs and innovation opportunities to key regional centres.

Among its projects in feasibility/development phase are floating wind turbines more than 20km off Newcastle, Port Kembla and Eden, NSW, with construction mooted to start in the late 2020s.

Oceanex predicts the Newcastle project will bring opportunities to a region transitioning from a mining-based economy, including more than 3000 jobs in the construction phase, and help power the acceleration of renewables-based industries such as hydrogen production and EVs.



Industries of the future: Wave and other energy

While offshore wind is well known source of renewable energy, an unimaginable amount of energy is also carried by ocean waves and currents. These energy sources have enormous potential to help replace fossil fuels and reduce global greenhouse gas emissions.

European nations including the UK, Spain, Portugal and France already see waves as an important alternative to solar and wind, the supply of which diminishes in the depths of the northern winter. And [CSIRO research](#) shows

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wave energy could contribute up to 11 per cent of Australia's energy (enough to power Melbourne) by 2050, making it a strong contender for the nation's future renewable energy mix.

How does it work? In a nutshell, wave energy is captured by devices that move with the motion of the waves, converting kinetic energy into electricity; alternatively, underwater turbines can capture energy from the predictable flow of tides.

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But it doesn't stop at waves. Scientists are also experimenting with Ocean Thermal Energy Conversion, which utilises the temperature difference between warm waters at the ocean's surface and cold deeper waters to generate electricity.



SNAPSHOT: CARNEGIE CLEAN ENERGY

carnegiece.com

Fremantle-based Carnegie Clean Energy is out to prove it can deliver the alternative energy storage system Australia needs – that is, filling the gap when other renewables such as wind and solar are sleeping. Carnegie's patented wave-energy technology features a 20m diameter disc-shaped buoy that sits just under the ocean's surface; when a wave passes and the buoy is lifted, winches inside it are driven by belts attached to the seabed. This produces up to 1 megawatt of energy, which is then passed through cables to the shore.

Carnegie chief executive Jonathan Fievez says units placed in key regions around Australia – which the CSIRO says possesses the world's largest wave energy resource – could generate five times our annual electricity needs. "Ocean Energy Europe forecasts a €53bn annual ocean energy market potential by 2050, supporting 500,000 jobs," he wrote in [The Australian](#). "Australia has the opportunity to be a key player, if we have the vision to take action now."



Industries of the future: Tourism

Against the backdrop of the unharnessed development of the 20th century, the tourism industry has produced some standout players who aim to tread lightly on the Earth. With the aim of swelling their ranks, Tourism Australia, in partnership with state and territory governments, has developed a Sustainability Framework for the Visitor Economy, with a toolkit to help SMEs in this space on their “path to sustainability”.

At a time when extreme ocean temperatures are posing a real threat to treasures such as the Great Barrier Reef, however, tourism may need to increasingly play an

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active role in environmental rescue and rehabilitation.

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In a 2017 report, Deloitte Access Economics estimated the Reef was worth \$6.4 billion per year to the Australian economy and supported 64,000 jobs. But it has suffered mass bleaching five times

since 2016 and faces serious challenges ahead as El Niño, against the backdrop of ocean warming, drives extreme heat conditions.

A multitude of projects is now emerging in places where Australian tourism intersects with the blue economy, the best embracing both cutting-edge science and First Nations traditional knowledge, engaging local communities, and even making citizen scientists out of tourists.



SNAPSHOT: GREAT BARRIER REEF FOUNDATION

barrierreef.org

Ningaloo Reef in Western Australia, along with its marine and coastal environment, generates more than \$110 million for the local economy and supports more than 1,000 jobs. But with predictions the UNESCO site will experience severe bleaching twice per decade by 2041, the race is on to protect this jewel. The Ningaloo Coast is part of the Great Barrier Reef Foundation's Resilient Reefs initiative, in which the foundation partners with reef managers and frontline communities to co-design solutions to improve reef resilience.

On the far side of the continent, a partnership between the foundation's Reef Islands Initiative and Lady Elliot Island Eco Resort has seen a 125% increase in turtle habitat at the island's main nesting beach. Meanwhile the Boats4Corals project is helping to scale up reef restoration with the help of Whitsundays tourism operators, Traditional Owners and recreational boaters, all trained in coral IVF techniques such as releasing larvae from floating nursery pools onto the Reef.



Communicating the blue economy

So, what role do marketers and communicators play in transforming our oceans into regenerative and thriving ecosystems? The answer is a vital one. Here's a snapshot of the unique challenges and opportunities when communicating about the blue economy.

The challenges:



Out of sight, out of mind:

Despite 87% of Australia's population living within 50 kilometres of the coast, for many of us marine environments simply don't factor into our busy daily lives. This "out of sight, out of mind" phenomenon can make them easy to overlook and underestimate their significance. Communicators need to re-shape public perceptions of the ocean as a vast self-sustaining "other world".

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Communicating complexity:

Ocean environments are inherently complex, with highly interdependent ecosystems, fragmented stakeholders, and complicated, cross-border governance and management structures. Effective science communications must serve as a bridge between scientists and the public.



Misinformation:

From whale deaths to climate denial, our oceans have long been a battleground for mis- and disinformation. With the rollout of AI and the acceleration of Australia's energy transition infrastructure, the volume of fake claims is set to intensify.

The opportunities:



Be specific:

The FrameWorks Institute's 'How to Talk About the Ocean so that People Will Listen' playbook explains: "It's not enough to state that a big problem exists. We see daily messages about multiple crises, leading to disbelief and fatalism. Instead, we need to explain the problem by being specific about the causes and implications. This boosts support for potential solutions."



Tell new stories:

In its 2023 Audience Insights, the Great Barrier Reef Foundation argues communicating about the reef is most effective when it provides new and varied ways to engage with the subject matter. Whether it's introducing Indigenous knowledge or highlighting new scientific breakthroughs, audiences respond best to fresh and positive impact stories.





Honest imagery:

Awareness of marine issues is at an all time high, which means glossy tourist images can create a disconnect and distrust. Realistic, honest imagery that depicts on-the-ground projects builds much stronger emotional connection with storytelling efforts.



Labelling and accreditation:

With ACCC greenwashing crackdowns escalating across a range of industries, there's never been a more important time for businesses to double down on accurate environmental claims. Third-party verification programs and labelling, like the Marine Stewardship Council's blue fish tick, are the most robust way to ensure your sustainability claims are evidence-based.



Celebrate values and emotions:

Academic Anne Toomey argues facts and scientific literacy

rarely drive conservation action. Instead, leveraging values, emotions and experience is a powerful way to change collective behaviour. In its Ocean Literacy Toolkit, the Future Seas initiative recommends using vivid images and personal places to tap into an audience's emotional bonds with a particular place (e.g. a favourite beach), in turn increasing the likelihood they will engage in environmentally friendly behaviour.



Bring the ocean to your audience:

Technology and the arts are finding new, creative ways to take the ocean to different audiences. Keep an eye out for Underwater Earth's roving Out of Sight Out Of Mind exhibition which uses QR codes to transport participants to unique underwater worlds, showcasing photographer and adventurer Christophe Bailhache's unique panoramic images taken during ten years of Underwater Earth expeditions.



Communicating the blue economy: Expert insights



AUSTRALIAN MARINE CONSERVATION SOCIETY

One of the biggest challenges facing conservationists is a growing disconnect between people and nature. To drive action for our oceans we must provide a bridge between individuals and our big blue backyard. One of the most effective methods of doing this is highlighting how marine environments affect us - healthy oceans are crucial to our health, livelihoods and that Aussie lifestyle we are so proud of. And, even though it seems obvious, remember that we're not talking with an homogenous mass of people - these are individual people with their own stories and interests so tailoring our messages as much as possible is crucial. When we make those connections, using storytelling, imagery and the right language we can increase interest, empathy and motivation to protect our oceans and marine wildlife.

Imogen Scott, *Director Of Communications*

MARINE STEWARDSHIP COUNCIL

No one lives in a place called global, so when tackling these big global and interconnected issues, it's vital we bring it closer to home. Indeed, if we can answer the "what's in it for me?" question, we're halfway there. But also, let's be real: sustainability isn't the primary driver for most people; delivering a side order of sustainability while focusing on the primary benefit is likely to shift behaviour at scale. And finally, with so much clutter and confusion, keep messaging credible, honest, meaningful and look to third-party verification.

Alex Webb, *Senior Communications & Marketing Manager, Oceania*



AUSTRALIAN NATIONAL MARITIME MUSEUM

We connect with key experts and stakeholders across various ocean sectors. We work with them to take information and share with the public via our extensive online and onsite programs. Increasing the ocean literacy of the public and engaging with them on these issues allows us to make change by inspiring individuals to do their part in protecting our oceans and waterways.

Emily Jateff, *Curator, Ocean Science & Technology*



The ones to watch:

3 startups shaping Australia's blue economy



AQUACULTR

aquacultr.com

Port Stephens-based Aquacultr is on a mission to make eating fish environmentally and economically sustainable for generations to come. Their modular, smart aquatic farming systems allow fish to be grown under controlled environmental conditions in water that is recycled through biological and mechanical filters, with minimal waste exchanged back into the environment and a low volume of water required per unit of production.



ULUU

uluu.com.au

Witnessing turtles eat plastic in her native Brazil was the catalyst for ecologist Dr Julia Reisser to co-found science-tech startup Uluu. The Perth-based company has harnessed the power of seaweed as a plastic alternative, with potential product applications being explored across packaging, fabrics, consumer electronics, furniture and car interiors.



HULLBOT

hullbot.com

Biofouling on vessels – or marine organisms attaching to the surface of a boat – is a huge global issue that's increasing fuel consumption and carbon pollution. Traditionally, toxic and expensive paints are used that are ineffective and damaging to the environment. Enter Hullbot: an engineering team that's tackling the issue with autonomous, in-water robots which inspect, map and clean boat hulls. Not only do clean hulls save fuel and reduce carbon emissions, but regular cleaning also eliminates the transferral of invasive species which can destabilise marine ecosystems.

Get in touch

MEET THE TEAM:

ALICE JOHNSON, *HEAD OF SUSTAINABILITY*

A specialist sustainability communicator, Alice has worked closely with all levels of government, not-for-profits, major brands and retailers to help them navigate and champion environmental and social change. She has developed and implemented campaigns for issues spanning circularity, sustainable seaweed, product stewardship, the energy transition and recycling education.



About greenHorizon

We are the sustainability and impact division of the award-winning agency Horizon Communication Group. Our team “gets” sustainability. We partner with people, projects and brands that want to make a difference, from organisations with sustainability at their core, to those just getting started on their ESG or SDG journey. Our team of specialist communicators will help you navigate new regulation, take action on the issues that matter and leverage the change for your business and your brand.

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Reach out for a chat: alice@horizoncg.com.au