



**SURFERS
WITH A
PLAN**

SURFER vs PLANET

V1.1

Dec 2020

A resource to inspire environmentally-sound practices across global surf culture. Featuring a look at the past, present and future state of surfing in a sustainability context, with suggestions on how to make more sustainable choices as a surfer, and how the surf industry can transition to less-harmful materials and manufacturing methods

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“ Surfers have a deep connection to the ocean. It is our playground, our source of spiritual sustenance, and often a profound part of who we are as people. The ocean is my happy place. Perhaps what we as surfers may not always appreciate - is that surfing is something that was traditionally connected to nature much more than it is today.

Historically, original surfboards were made from locally sourced wood. Everything that went into the ocean would eventually go back to nature. Since the introduction of plastics and mass market consumption, this is no longer the case. Right now, we exist in a critical, exciting moment in history. I am witness to a positive shift occurring in the way we relate to nature. In the surfing community in particular, we are feeling a keen sense of responsibility to look after our oceans and take a closer look at the materials and processes involved in producing our surf equipment.

Unfortunately our consumption habits - from the products we use every day to the materials our gear is made of - are destroying the oceans we love. With so many options to choose from, it is difficult for us to remain respectful to nature and still enjoy surfing without compromising high-performance. It's a challenge I have struggled with personally throughout my surfing career, and it is a question that goes to the heart of how we view our role on this planet as part of a global ecosystem. Can we do what we love without compromising the environment?

I am proud to add my voice to this change. We set the standards by what we allow. Our actions are universal. Through reading and sharing this guide, I trust surfers, surfing industry employees and all ocean lovers will feel confident to demand the changes our beautiful Planet Earth deserves.”


Layne Beachley AO
7 x World Champion
Chair, Surfing Australia

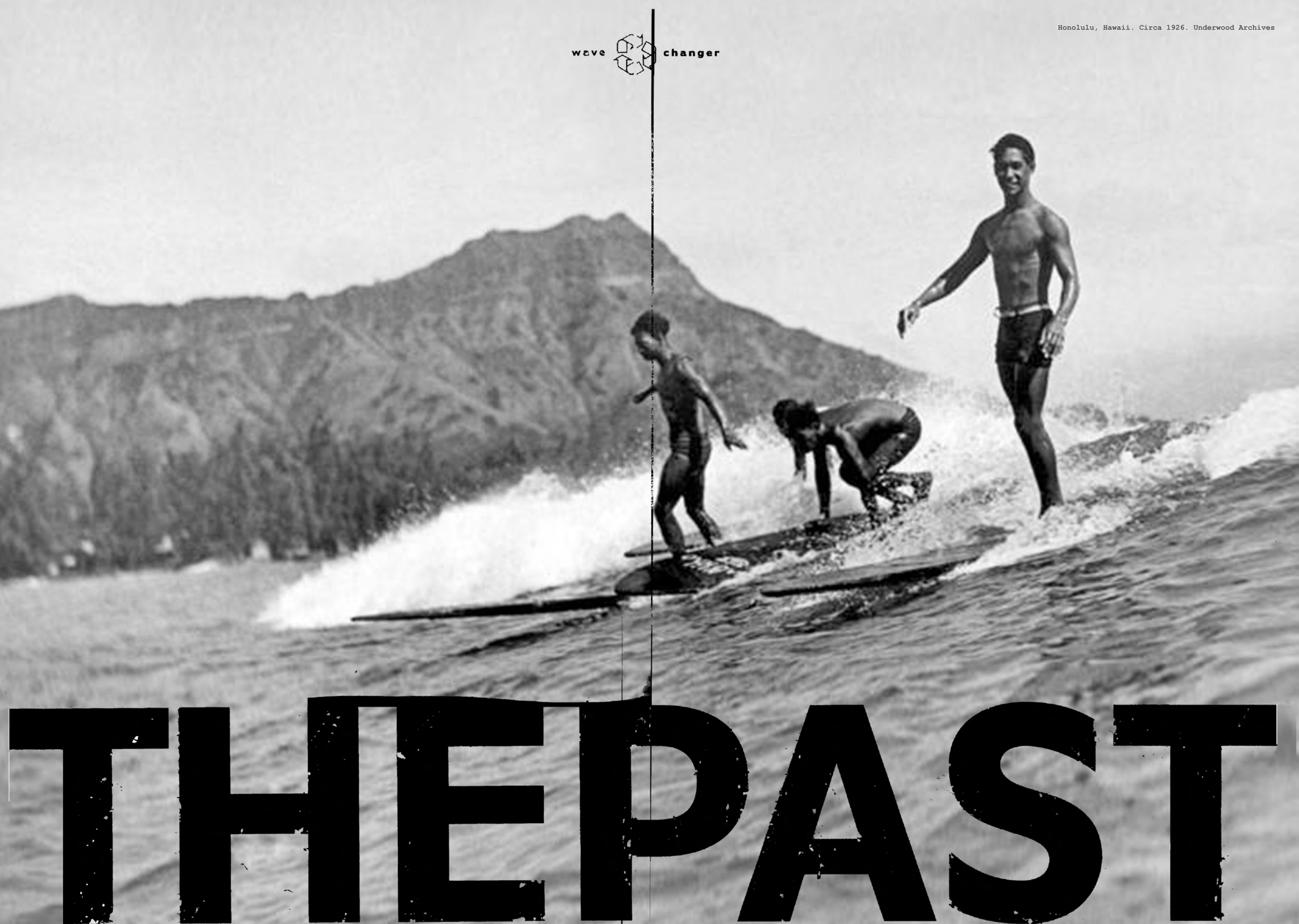
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Wave Changer acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work.

wave  changer



THE PAST

THE PAST

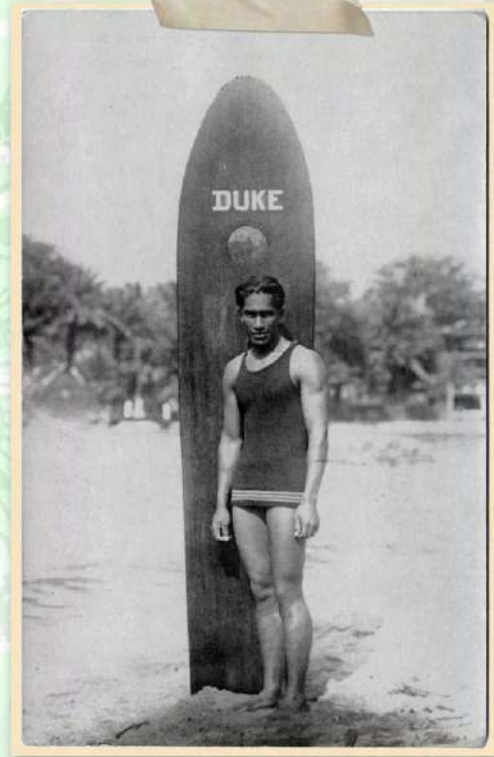
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SURFING HAS A RICH HISTORY

Early surfboards - papa he'e nalu - were created in Tahiti and Hawaii circa 1000 years ago. Those first surfers rode on boards made of locally sourced wood, sanded with natural material like coral or stone, and treated with tree bark sap and nut oil.



"Surf-Swimming" Sandwich Islands, (Hawaii) circa 1897



Duke Kahanamoku with his surfboard. Photo by Floyd Lavinius Parks. Courtesy Eisenhower Library.

A millennia after the first surfers discovered the joy of riding waves, the sport had gone global. The American Tom Blake designed the first hollow surfboard for the modern era, which hit the market in 1930. Still made of natural wood, but now sourced from his own homeland, Blake's redwood board was a huge success.

Redwood boards were heavy. As the sport grew in popularity in the early **1930s** – balsa wood from South America – weighing about a third as much as redwood – became a popular surfboard material.

Advances in technology during WWII led to new materials developed and adopted in almost every industry in the world. The promise of a light, easily synthesized and durable material was a revelation – and man-made plastic rapidly became a staple of modern life.

After the first fibreglass board was built in the **1940s**, it didn't take long for this to become the material of choice for shapers, along with Styrofoam as the core flotation component. Polyurethane foam (PU foam) arrived in the **1950s**.

Things stayed this way until the **1980s**, when surfing became commodified, globalised and packaged for mass production. This is the era of some of Australia's most recognisable brand names: Billabong, Quiksilver and Rip Curl.

Stewart, Richard Stewart (National Geographic)

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By the mid-1990s surf monopolies had resulted in offshore manufacturing driven by cost efficiency. Mass produced PU foam and polyester resin boards dominated the market.

Clark Foam ceased operations in 2005. At their peak they provided 90% of PU foam surfboard blanks in the USA and 60% of worldwide supply. In hindsight, Clark Foam's closure had unintentionally kick-started new innovations such as expanded polystyrene foam (EPS foam) and epoxy resins. The design of surfing equipment, along with the materials used, has barely changed since the late 1950s.



Hundreds of thousands of new surfboards are produced globally each year, and the vast majority are made of materials drawn from finite resources that won't break down when their user is done with them. PU and EPS surfboards have become lighter and lighter, but their environmental impact has barely improved. We need a **MATERIALS REVOLUTION** that doesn't involve petrochemicals.

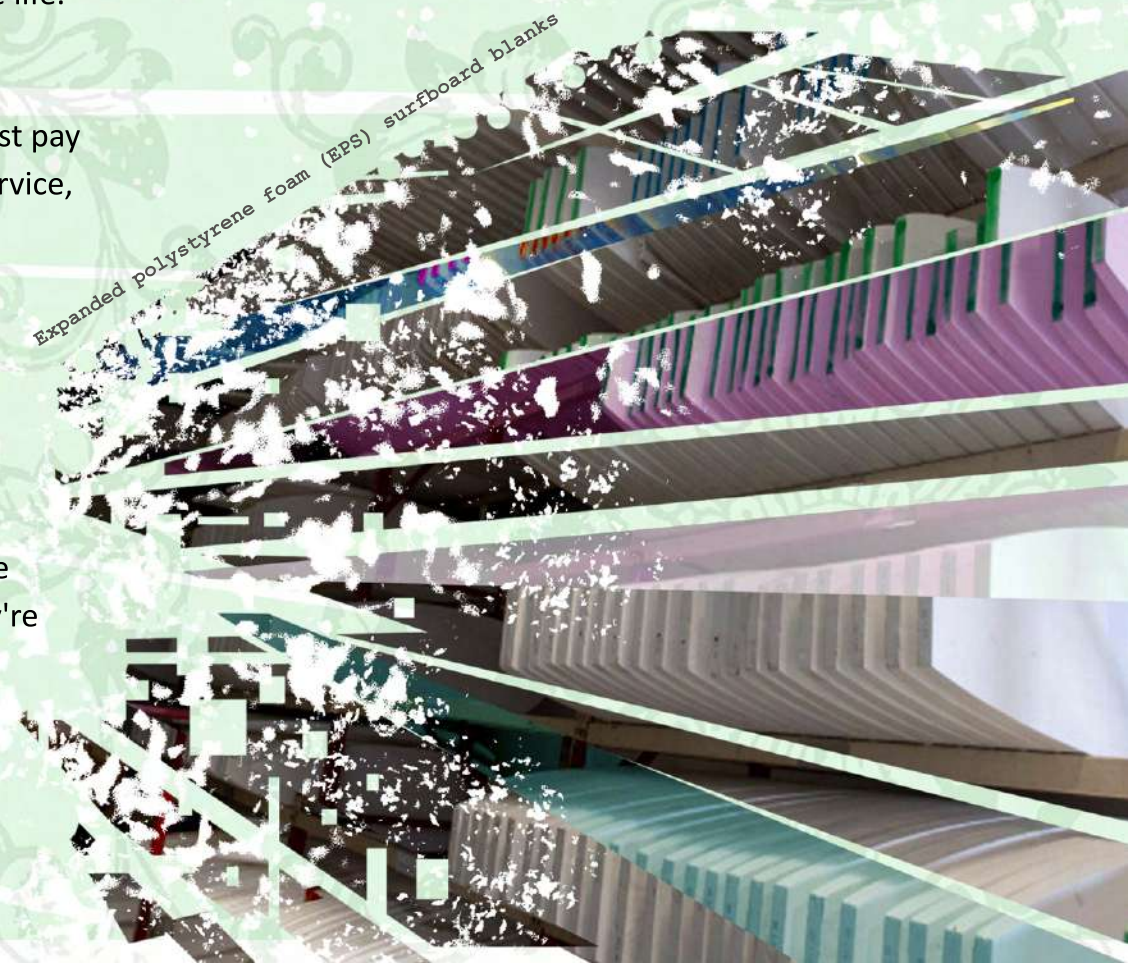
A NOTE ON WETSUITS AND WAX:

The majority of wetsuits are made of neoprene - a synthetic material created by chemical scientists in 1930, this material stays around forever too.

And there's surf wax - historically produced using petroleum-derived paraffin and other chemical additives. This ends up on beaches or in the ocean where it negatively impacts marine life.

"For the most part, we all just pay Mother Earth a bit of lip service, then go on about our day riding toxic surfboards made from foam and fiberglass, wearing wetsuits made of rubber or trunks made in sweat shops, and using accessories made from things that, once they're created, will pretty much never disappear."

Alexander Haro, The Inertia



THE PRESENT

wave  changer

surfboards
resins
leashes
wetsuits
surf wax
sunscreen
packaging



THE PRESENT

SURFBOARDS

Most surfboards have a foam core (known as a blank) made from PU or EPS foam, both are derived from crude oil. While EPS can be recycled through certain initiatives, such as Sustainable Surf's Waste to Waves program (in the US), in reality it rarely is. Technological advancements are now allowing some manufacturers to produce surfboards blanks made from mycelium (fungi), algae, cellulose, sugarcane and vegetable waste. Protective outer layers from natural sources like timber and cork. Fibreglass cloth alternatives using hemp, flax, coconut husk and even volcanic basalt. These are all relatively niche, emerging technologies in an industry largely dominated by non-renewable materials.

Since 2011, Sustainable Surf has been shining a light on ways to have a positive impact with programs like the ECOBOARD Project (think 'organic' labelling for surfboards) and SeaTrees (reforesting the ocean to reverse climate change).



"We use a CNC machine that allows us to truly capture every single bit of waste made from the EPS foam blank, then that foam goes back to Marko Foam to use again. With regards to the waste resin, I started looking at the waste streams of all the individual rooms; the shaping bay, sanding room and the glassing room. We categorise every single waste stream into separate bins, use an industrial shredding machine and then use product moulds to make really cool products... coasters, planters, wax combs and other lifestyle products."

Ryan Harris, Earth Technologies and Ry Harris Shapes

"Never in the history of humankind has our waste become so detrimental yet so valuable. By valuable, I mean in the form of recycling and reusing. With the right perspective, we can transform the way our waste and pollution is dealt with, so it can purposefully benefit our communities. For example, mass composting to feed our gardens, recycled material to construct playgrounds and roads, but furthermore, within the surfing industry we are seeing commitments in the form of swimwear and surf apparel upcycled out of landfill-bound content."

Hannah Bennett, Pro-Surfer and Ocean Activist



TRACTION / TAIL PADS

We're now seeing natural cork and algae as replacements for the traditional EVA foam pads. There are even wafer-thin, adhesive panels that need only be applied once. Check out EcoPro, Der Waal and Slater Designs + BLOOM Foam for recent examples.



RESIN + LEASHES / LEG-ROPES

Polyester resin is the cheapest and most widely available surfboard resin available. It releases volatile organic compounds (VOCs) which can be dangerous to inhale. Epoxy resin is lighter, stronger, has better flex and emits significantly less VOCs than polyester. Both types of resin originate from petroleum. Super Sap by Entropy Resins, R*Concept and Green Poxy by Sicomin are examples of bio-based, progressive resins currently on the market.

Leashes are typically made from a urethane cord and Velcro ankle strap. Wave Tribe and Revolwe + Slater Designs have created leashes made from recycled PET plastic water bottles and natural rubber.



Patagonia Yulex wetsuit

WETSUITS

Breaking away from traditional oil-based neoprene - Patagonia, Finisterre and Vissla all have a range of wetsuits featuring natural rubber, and in some suits recycled PET on the inner layers. Patagonia has a return + repair scheme. Finisterre uses a type of biodegradable rubber in its wetsuits. US-based wetsuit brand Matuse makes suits from Geoprene, which is calcium carbonate a.k.a limestone.

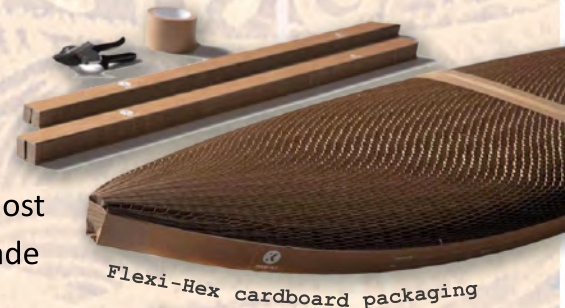
SURF WAX + SUNSCREEN

Surf wax typically contains paraffin, petroleum jelly, synthetic adhesives and chemical fragrances. Wax inevitably peels off surfboards having a direct impact on beaches, reefs and marine-life. There are now natural substitutes for paraffin; such as coconut and soybean oils, beeswax and tree resin. Matunas have created a wax which is 100 per cent petroleum-free and made with local ingredients (even the packaging is made from recycled paper and printed with soy-based inks).

A lot of modern sun creams contain chemicals, the main culprit being oxybenzone, a substance that contributes to coral reef bleaching and has potential health impacts on the user. Manda natural sunscreen, made in California, contains no synthetic chemicals or stabilisers, using only food safe organic ingredients. We Are Feel Good Inc. - an Australian-made sunscreen - is also reef safe and free from oxybenzone.

PACKAGING

Flexi-Hex is a hexagonal cardboard sleeve that wraps around your surfboard before it's transported, allowing flexibility to fit over almost any shape board. Planet Protector Packaging provides products made out of 100% sheep waste wool from Australia and New Zealand.



Disclaimer note: This publication is not affiliated with any of the organisations mentioned. It contains publicly available information on the current materials and business practices at the time of publishing.

THE FUTURE



We need to **urgently** transition our society to a renewable economy. The extent to which we achieve this, and the speed at which we accomplish it, will determine the quality of life and likely the ultimate survival of every living thing on our planet. Every industry and every sector will need to participate in this transition. This means **exciting times ahead** for innovation in the surfing industry. Immediate wins could involve focussing on recycling usable materials that are already out there, transitioning them into a circular economy model. Surfboards made with a core of EPS foam or recycled EPS foam (as opposed to PU foam), is a positive step forward... but it shouldn't stop there.

MATERIALS OF THE FUTURE

A future where surfboards do not contain any petroleum-based foam is not far off. Shapers and environmentally minded businesses should continue to develop plant-based alternatives, but also explore unconventional options. Resins can continue to increase in bio-content. Producers should strive for 100% renewable materials – or potentially a surfboard design that doesn't need resin at all. The same can be said about surf wax... will we need wax in the future if surfboard decks have some form of built-in traction? Wetsuit manufacturers can continue to work with natural rubber, and could also explore other alternatives to neoprene. There are already examples of companies in other industries leading the way into a future of sustainable materials: Vollebak has a range of biodegradable clothing, Biohm makes organic building materials, and Loop offers biodegradable coffins and caskets. The ultimate goal for all of our materials is to have products that safely return to (or nourish) the earth.



Vollebak's biodegradable t-shirt



Cellutech bike helmet



Check out this bike helmet from Cellutech from **Sweden:** The outer layer is a timber veneer, straps are made from reinforced paper, and the inner foam is from cellulose fibres: A biodegradable helmet made from materials only found in a forest. Imagine if the surfing industry could boast the same about our surfboards.

" Wouldn't it be great if we could get close to the cyclic ethos of the original surfboard - a wooden plank or 'splinter' - and still retain the performance characteristics we've come to know and love from modern surfboards? Those original hand-carved planks of local wood, often salvaged from old canoes, were all that surfers needed to enjoy the waves. You would hand that board to your kids and grandkids, and if you lost that board, it would wash up and someone else would be stoked and go surf it. At the very least it would become compost and help grow a new tree."

Michael Stewart
co-founder of Sustainable Surf

CULTURE, CONSUMERISM AND MANUFACTURING

No answer to over-exploitation is complete without addressing the problem of consumer behaviour. Could we simply cut down on the amount of "stuff" individuals own? Could surfing adopt a leasing model or a membership service? This is already happening with car sharing. Perhaps surf equipment manufacturers will focus more on better quality of materials with return and repair initiatives, as demonstrated successfully by Patagonia. And can we limit offshore manufacturing to slash the carbon footprint of a product?



There's so much potential for an exciting and positive transformation to support, rather than deplete and degrade, our natural environment. Examples are out there, such as the intelligent and creative work already being done by WAW Handplanes and Spooked Kooks (both Australian companies), NOTOX and Wyve Surfboards (France and Aus), Earth Technologies and Sustainable Surf (USA) and many others achieving great outcomes. We can learn from the food industry... after a sustained effort to educate and influence through campaigns and disseminating information, more and more people want natural, low-impact, local, and environmentally sustainable. This comes along with rejecting chemical and processed products.

Forward-thinking leadership is necessary for change; to drive progressive ideas and deliver positive messages about safeguarding the environment. Continual support for (and belief in) grassroots innovation is critical for decision-makers to take notice. Let's embrace technology to fast-track the transition to truly sustainable materials and responsible manufacturing methods in a two-way transaction with Planet Earth.

" For me, sustainability came before surfing did. And it was hard core sustainability; living in the cloud forest of Ecuador with no electricity, growing our own food, helping communities keep out industrial mining. We came across surfing almost by accident back in Australia. Surfing quickly became the lens - the ultimate pathway to a lifestyle of sheer joy and connection, rather than an idea of sacrifice and austerity that still seems to scare people about sustainability. It's hard sometimes, especially in competitive surfing (with all the travelling), to do everything right - but aligning with people, groups and companies that put purpose before profit has always felt like the right thing to do."

Pacha Light, Pro Surfer and Ocean Conservationist



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TO ACTION

YOU, THE SURFER

Buy fewer surfboards; look after the boards you already own, repair your board if you can't pay a professional to fix it and exchange or swap boards between mates. Support your local shaper and buy their surfboards. It'll cost more than a mass-produced board but is likely to last longer, can be custom-made and you'll be supporting a small business. Challenge yourself by shaping your own surfboard, perhaps with the help of an experienced shaper. Bonus points if it's made out of timber or other natural materials. Creatives can upcycle old or broken boards into new hybrid surf craft, as demonstrated in the annual Vissla and Surfrider Creators & Innovators competition. Think about the sustainability of your next surfboard or wetsuit; help create the consumer demand for more sustainable alternatives.



Charlie Cadin's sea lettuce surfboard: Winner of the 2020 Creators and Innovators Contest



INDEPENDENT SHAPERS AND SURF EQUIPMENT MANUFACTURERS

Where possible, use EPS foam with a view to reusing or recycling that foam. Aim to use local materials and resources. Capture waste and dispose of it safely, or even turn it into new products. Look into ways to transition (or at least include some elements) of natural, renewable materials and even plant-based, biodegradable content that pushes the limits and showcases exciting new materials. It could give you a competitive advantage. Shapers and manufacturers of surf equipment can be pioneers of sensible consumer initiatives that the rest of the world can take inspiration from.



Could there be systems that encourage surfers to return their boards, so that manufacturers can re-use those materials – or at the very least – dispose of it responsibly. Aim to install renewable energy for current and future manufacturing facilities.



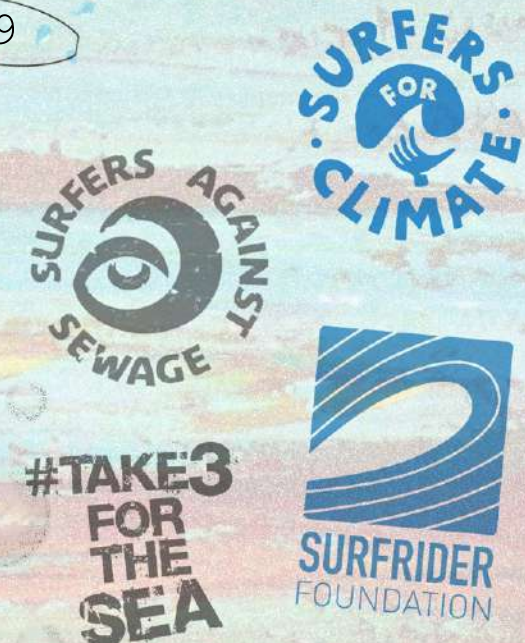
"It's increasingly evident that the world cannot sustain the indiscriminate abuse of resources and subsequent pollution of our biosphere. It's not a time to procrastinate or hope someone else is going to fix it. The time is now to halt and reverse the destruction of our shared planet ocean. We are the people we've been waiting for."

Tim Silverwood, Co-founder of Take 3 for the Sea and Ocean Impact Organisation



"It's an ever-reaching sport that is evolving into something really beautiful and positive. I have hope for surfing."

Rhonda Harper, Founder of Black Girls Surf, DEI Coordinator of Surfrider San Mateo and Ambassador with Surfers for Climate



OUT OF THE WATER

Reduce your carbon footprint by simply travelling less. **Keep it local;** surf with your mates and get to know your local community. Get involved with local beach clean-ups and support environmental organisations such as Surfrider Foundation, Surfers Against Sewage, Surfers for Climate and Take 3 for the Sea. Be mindful of your day-to-day habits and play your part by reducing energy consumption, buy less plastic, eat less meat, eat local, be mindful of food waste, recycle, compost and just buy less stuff! Read up on a range of publicly available information to empower yourself to make informed decisions. Speak up and share positive stories.

Collective pressure, as we're seeing with the progress in reducing and eliminating single-use plastics, can speed up the pressure on governments to act faster, rather than waiting until the environmental situation is so dire that any innovation is in vain.

Surfing has a wonderful positive impact on those who enjoy it. Anyone who wants to surf should feel comfortable and safe doing so, regardless of your background or skill level. This beautiful pastime brings people together and has the potential to build and empower a community in an unmeasurable way.

"Surfing needs a sustainability shift. Now, more than ever it's time to ditch the dependency on fossil fuels and implement planet-safe materials into all surf gear. Safeguarding healthy oceans requires action from our industry and us individuals. Purchase smarter (and less), demand better and ride the wave of transition into a flourishing future."

Belinda Baggs, Patagonia Surf Activist, Wave Changer, Take 3 Ambassador, Co-Founder Surfers For Climate



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The featured products, services and organisations shown in this publication are intended to give a brief snapshot of what is currently available and potentially on the horizon, to the best of our knowledge. The content of this guide has in no way been paid for or sponsored.

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[Wave Changer is an independent, not-for-profit organisation that aims to inform and inspire the surf community to embrace sustainable solutions]

wavechanger.org



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UTS SHOPFRONT