

IN THE FIGHT AGAINST CLIMATE CHANGE

BLUE ⁶CARBON

WE MAY HAVE OVERLOOKED OUR GREATEST ALLY

MAKEWAVES



A low-angle shot of a person's hands holding a vintage silver and black camera up to their eye, as if taking a picture. The person is shirtless, and their skin is glistening with sweat. The background is a bright blue sky and a lush green, hilly landscape. The camera has a large lens and a flash on top.

FROM OSCAR-NOMINATED DIRECTOR FERNANDO MEIRELLES

'CITY OF GOD' AND 'THE TWO POPES'

MAKEWAVES





AND BAFTA AND EMMY-WINNING DIRECTOR NICOLAS BROWN

'THE SERENGETI RULES'

MAKEWAVES





INTRODUCING GRAMMY-NOMINATED JAYDA G

MAKEWAVES



A man wearing a green jacket, a green cap with a white feather, and sunglasses is singing into a microphone. He is wearing a black glove on his left hand. The background is a vibrant underwater scene with blue water, coral, and several black and white striped clownfish. A large, translucent green starfish is visible in the foreground.

WITH ORIGINAL MUSIC AND SCORE BY RZA

MAKEWAVES



A hand is shown in the lower-left foreground, reaching upwards with fingers slightly spread, as if reaching for something. The background is a serene sunset or sunrise over a body of water. The sun is a bright, glowing orb on the horizon, casting a warm, golden light across the sky and reflecting on the water's surface. The sky transitions from a deep blue at the top to a soft yellow near the horizon. The water is calm, with gentle ripples reflecting the light. The overall mood is one of hope and aspiration.

A STORY OF HOPE IN TROUBLING TIMES

MAKEWAVES



A woman with dark curly hair, wearing a black hat and a white shawl, is shown in profile on the left side of the image, looking out over a lush mangrove forest. The forest is dense with green trees and exposed roots, with a narrow waterway winding through it. In the distance, a small white boat with several people on board is visible on the water. The overall scene is bathed in warm, golden light, suggesting a sunset or sunrise. A white rectangular box with black text is centered over the middle of the image.

**THERE'S A NEW WEAPON (AND A NEW VOICE)
IN THE BATTLE AGAINST CLIMATE CHANGE**

MAKE WAVES





JAYDA G ISN'T A HOUSEHOLD NAME... YET.

But to her growing legion of fans - from Australia to Brazil, Berlin to Quebec - she's an artist with a unique and powerful voice.

And *now*, the world is starting to listen.

Known by her stage name, Jayda G, she's a Grammy-nominated DJ and music producer.

She's played dozens of shows from Detroit to Bali, and performed at some of the world's most prestigious music festivals, including Glastonbury. When she's not touring, she's in the studio working on her second album or remixing tracks by the likes of Dua Lipa.

Jayda G is fun, gregarious and loves dancing. But there's another side to her...



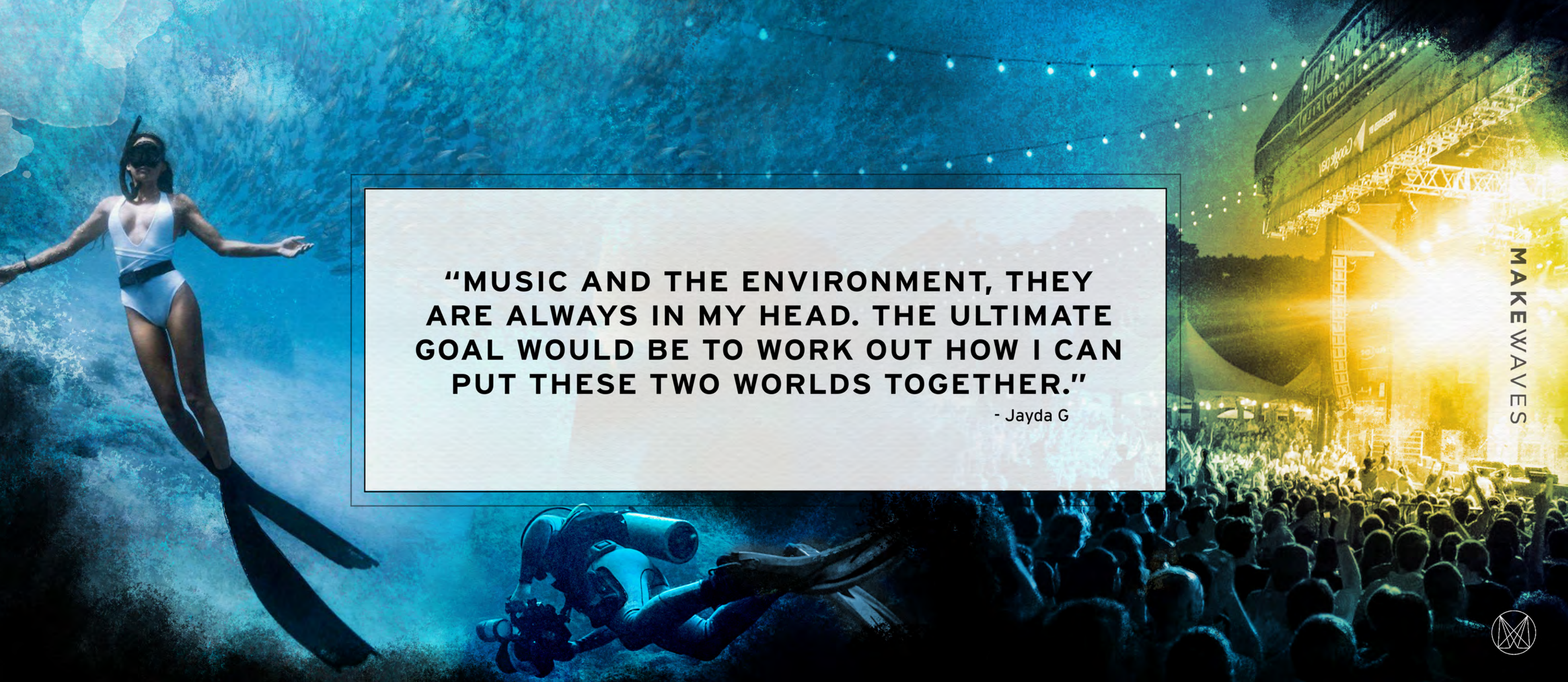
JAYDA GUY IS ALSO A QUALIFIED SCIENTIST

Jayda has 10 years' experience as a biologist and she's got a master's degree specialising in environmental toxicology, for which her thesis was on chemical pollutants harming orcas off the coast of Vancouver.

She's conducted field work on endangered green sea turtles in Hawaii and researched Massasauga rattlesnakes in Canada.

Her latest project is a series of science talks, aimed at making the world of academia less intimidating for a younger audience.





**"MUSIC AND THE ENVIRONMENT, THEY
ARE ALWAYS IN MY HEAD. THE ULTIMATE
GOAL WOULD BE TO WORK OUT HOW I CAN
PUT THESE TWO WORLDS TOGETHER."**

- Jayda G

MAKEWAVES





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LIKE MANY OF HER GENERATION,

Jayda sees the threat of climate change with a steely-eyed realism.

She fears we've become so disconnected from nature that we don't understand how negatively we're impacting the world.

But for Jayda, the natural world is also a source of hope and inspiration.



**IN THE FIGHT AGAINST CLIMATE CHANGE,
WE'VE JUST DISCOVERED ONE OF OUR GREATEST NATURAL WEAPONS...**

...BLUE ⁶CARBON



BLUE CARBON CAN HELP STEM THE TIDE AGAINST CLIMATE CHANGE.

Blue Carbon is the collective name given to coastal ecosystems, including mangroves, marshlands, seagrass meadows and kelp forests.

These ecosystems have the potential to **absorb carbon 35 times faster than tropical rainforests.**

Blue Carbon relies on **protecting, rebuilding and restoring** these vital ecosystems as well as creating a sustainable income for communities through global carbon-trading mechanisms.

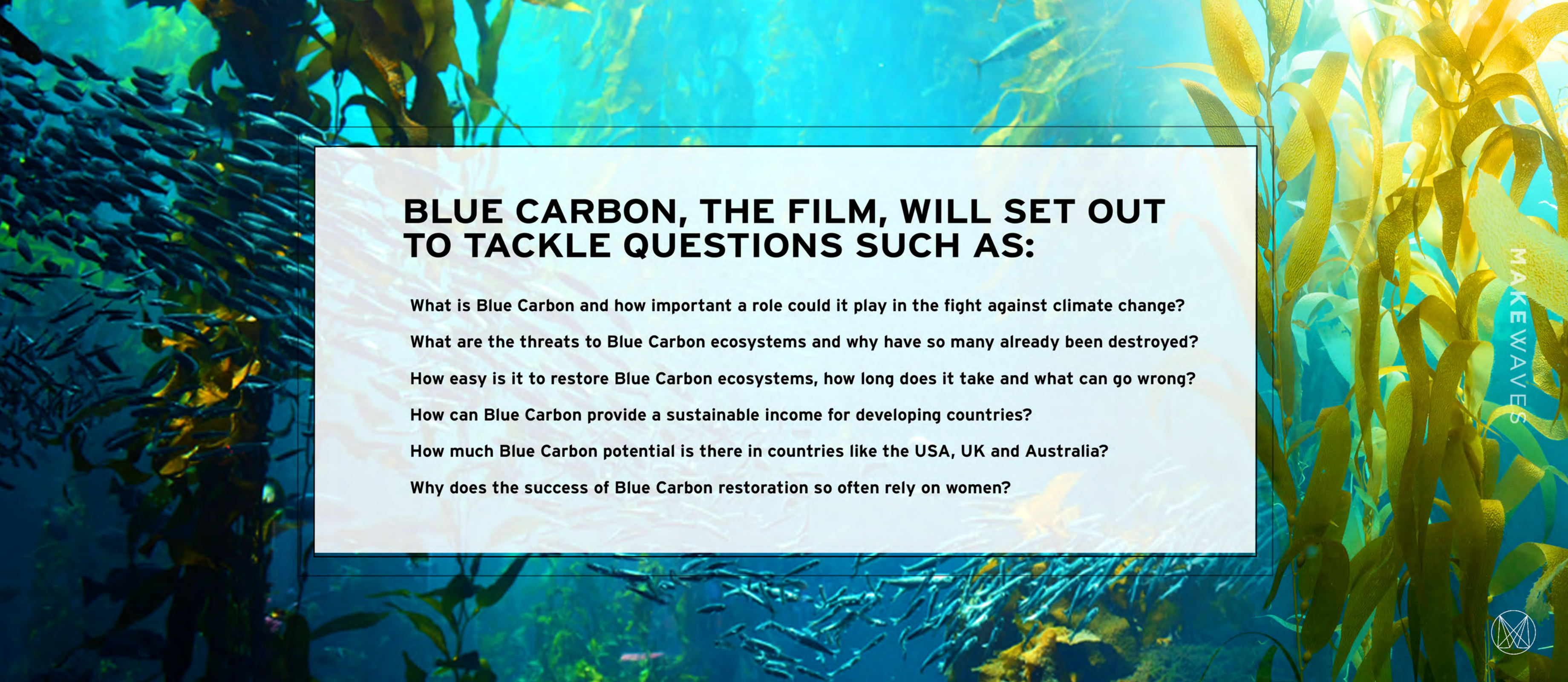




**"THAT'S THE BEAUTIFUL THING ABOUT
BLUE CARBON, IT'S SOMETHING THAT
CAN GIVE US ALL HOPE."**

- Jayda G



An underwater scene featuring a dense forest of kelp on the left and right sides. The water is a deep blue, and numerous small, silvery fish are swimming in the background. A large, semi-transparent white rectangular box is centered in the image, containing text.

BLUE CARBON, THE FILM, WILL SET OUT TO TACKLE QUESTIONS SUCH AS:

What is Blue Carbon and how important a role could it play in the fight against climate change?

What are the threats to Blue Carbon ecosystems and why have so many already been destroyed?

How easy is it to restore Blue Carbon ecosystems, how long does it take and what can go wrong?

How can Blue Carbon provide a sustainable income for developing countries?

How much Blue Carbon potential is there in countries like the USA, UK and Australia?

Why does the success of Blue Carbon restoration so often rely on women?





THE FILM

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ON THE TRAIL OF BLUE CARBON

Jayda will embark on a transformational journey that immerses viewers in places and cultures that are rarely given the spotlight.

She will travel to the frontlines of the climate crisis and meet the people who are most vulnerable, yet are emerging as global leaders.

Blue Carbon, the movie, is intended to engage a youth audience that is tired of waiting for change - a generation that is ready to step up and take the lead on protecting and restoring our environment.

Jayda will not be afraid to confront the stark realities we face, but her journey will be one of hope and positive action.



SCIENCE YOU CAN DANCE TO

Blue Carbon, the movie, sits at the crossroads of science and art.

Jayda's journey will take her on a musical odyssey. She'll meet street musicians in Ho Chi Minh City, dive into underground jazz clubs in Bogota and collaborate with some of her favourite musicians - such as **Seu Jorge**, one of Brazil's most iconic and charismatic artists.

Along the way, Jayda will gather natural sounds and collaborate with these artists to produce a new, four-track EP, inspired by Blue Carbon, that will be distributed to coincide with the film's release.

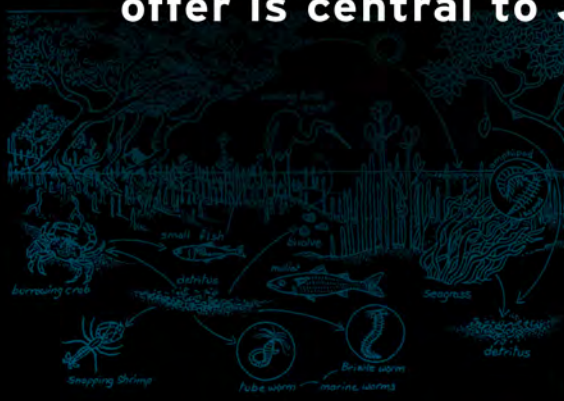
Using music to help communicate the solutions science has to offer is central to Jayda's character - and to our story.

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proportionately ration. The role of the oceans is not as prominent as it should be. We agree upon the importance of the oceans for carbon cycling, and the need for more research to determine the role of the oceans in BC ecosystems. We are effective in communicating the need for a map for the

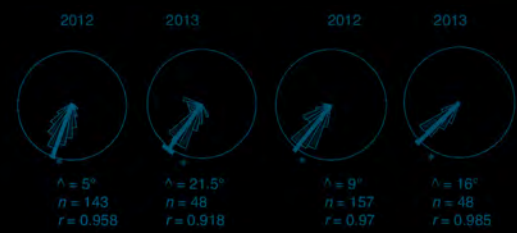
the oceans and meadows, tidal wetlands, and mangroves are vital to mitigate



ABSTRACT. To assess the stock, recruitment, and growth of Hawaiian monk seals (*Nmophila kuhlii*) and to evaluate the impact of climate change on their population, we conducted a population viability analysis (PVA) for the Hawaiian monk seal. We examined the stock, recruitment, and growth of the Hawaiian monk seal population in the Hawaiian Islands. We identified only 1 outflow with high probability of survival, indicating that Hawaiian monk seals might occasionally, albeit rarely, be subject to natural mortality outside the Hawaiian Archipelago, both in the eastern and western Pacific. These findings lead us to conclude that the Hawaiian monk seal population around the Hawaiian Islands can be considered part of a distinct regional population for management. The finding that PVA scattered across a distance of over 2400 km belong to one genetic stock is unique among sea turtles, and allows Hawaiian monk seals to be assessed separately from other Pacific stocks with respect to risk. We explore the unique population ecology of Hawaiian monk seals with reference to the complex life history of this marine megafauna.

KEY WORDS: Population genetics, Control region, Mitochondrial DNA, mtDNA, Sea turtles

INTRODUCTION In the northwestern Hawaiian Islands, the PVA nesting



I. Introduction

Understanding matter circulation in the biosphere constitutes one of the fundamental research objectives for ecologists. Stocks of materials, their distribution, and their fluxes between different compartments are basic parameters that need to be characterized to explain the functioning of any ecosystem. Their study is usually arduous owing to the variety of routes that materials can follow, and to the complexity of the processes that are involved. Leopold (1949) described matter flux in ecosystems in a brief but elegant way in what he named *The odyssey of the atom X*: "An atom at large in the bios is too free to know freedom; an atom back to

the biosphere brings an atom to life, while the organism's death leaves it at the mercy of decomposers that return it to the inorganic compartment where it waits to join a new cycle. The persistence of an ecosystem relies on both the optimization of carbon and nutrient acquisition and on the minimization of carbon and nutrient losses (Hemminga et al., 1991). In other words, persistence requires a continuous effort to prevent the atoms essential for life from escaping the fast cycles that enable the high production we observe on our planet. Therefore, a fine tuned balance between production and remineralization (and the fluxes between sources and sinks) govern the rhythm of the

ABSTRACT

Globally, seagrass ecosystems are considered major blue carbon sinks and thus indirect contributors to climate change mitigation. Quantitative estimates, and multi-scale appraisals of sources that underlie long-term storage of sedimentary carbon are vital for understanding coastal carbon dynamics. Across a tropical-subtropical coastal continuum in the Western Indian Ocean, we estimated organic (C_{org}) and inorganic (C_{inorg}) carbon stocks in seagrass

sediment. Quantified levels and variability of two carbon stocks were evaluated within the relative to the environment in terms of their spatial distribution, proper landscape configuration, and explored seagrass encompassed the range of moderate levels of primary C_{org} (ranging from 0.20 to 1.44%) depending on species- and site-specific but higher than unvegetated areas (ranging from 0.09 to 0.33% depending on site-specific and species-specific characteristics).



NATURAL WONDER

Jayda's journey will be an immersive experience into some of the most exotic and breathtaking natural wonders on the planet.

Whether she's camping in hammocks suspended high over the swamps of the Florida Everglades, or scuba diving in crystal clear waters off the coast of Vietnam - where she'll have a magical encounter with the shy, water-dwelling cow, the manatee - Blue Carbon, the film, will conjure up mystery, reverence and empathy in viewers' minds.



An aerial photograph of a coastal wetland. The image shows a complex network of winding waterways, some of which are a vibrant turquoise color, contrasting with the surrounding brown and purple marshland. The waterways meander through the landscape, creating a series of interconnected pools and channels. The overall texture is rough and organic, typical of a natural wetland environment. The colors range from deep blues and purples to earthy browns and greens.

SAMPLE CHARACTERS AND STORIES

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BLUE CARBON USA

Florida's coast has been stripped of blue carbon.

It's almost as if humanity in the form of developers and the Army Corps of Engineers has been waging a war to drain swamps, straighten rivers and transform wild coastlines into white sandy beaches, golf courses and seaside condominiums (a familiar story known across the world...).

Jayda loves to play sold out gigs in Miami. But in sharp contrast to the fun-loving, margarita-fuelled atmosphere, Jayda is also painfully aware of the reality. Florida is on the front lines of climate change.

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A woman with long dark hair, wearing a white sleeveless top and dark shorts, is sitting on a yellow fire hydrant in a flooded city street. The water is deep, reaching up to the hydrant. In the background, there are palm trees, modern buildings, and street signs. The scene is captured in a cinematic style with a teal/blue color grade.

BLUE CARBON PROTECTS US FROM CLIMATE CHANGE

Pioneering scientist Emily Pigeon describes Blue Carbon as a kind of “skin” that shields the land from the destructive forces of salt water and storm surges.

Developers in Florida know that no matter how you look at it, adapting to climate change is going to cost serious money—even for one of the wealthiest places on Earth. What chance do the poorer, less white neighbourhoods have?

It is a hot topic even on capitol hill, where the Bipartisan Blue Carbon for Our Planet Act is being debated (as of April 22, 2021). Advocates argue Blue Carbon could serve a dual function: protect the coastline AND sequester CO2.

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IMMERSE IN A FORGOTTEN UNDERWATER KINGDOM

In the few places in Florida where blue carbon remains intact you find a magical world of manatees and crocodiles, of waterfowl and wildlife. Becoming immersed in this landscape one needs to overcome a level of primal fear. But doing so, Jayda is rewarded with the most incredible wildlife experiences.

Manatees seem like creatures from a world that time forgot. Ecologists recently discovered that many species of sea grass - a particularly important form of blue carbon – co-evolved with these gentle underwater “cows”. On land if you lose grazers like bison or wildebeest you will lose the entire prairie. Likewise, without the manatee you would lose this entire underwater prairie.



BLUE CARBON IS A STORY IN WHICH PEOPLE FROM THE MOST VULNERABLE NATIONS ARE EMERGING AS LEADERS.

From Vietnam to Colombia, Senegal to Papua New Guinea, Jayda will travel the globe, meeting the coastal communities who are suffering the most on the frontlines of the climate crisis.

These stories aren't of well-meaning NGOs from the developed world focusing on the developing world – instead, these are stories of communities who have found their own path. They are saving, in most cases, mangrove forests against the odds. They are the true underdogs in our story and they have lessons we all need to heed.

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DR. LE DUC TUAN

'MR. MANGROVE.' VIETNAM

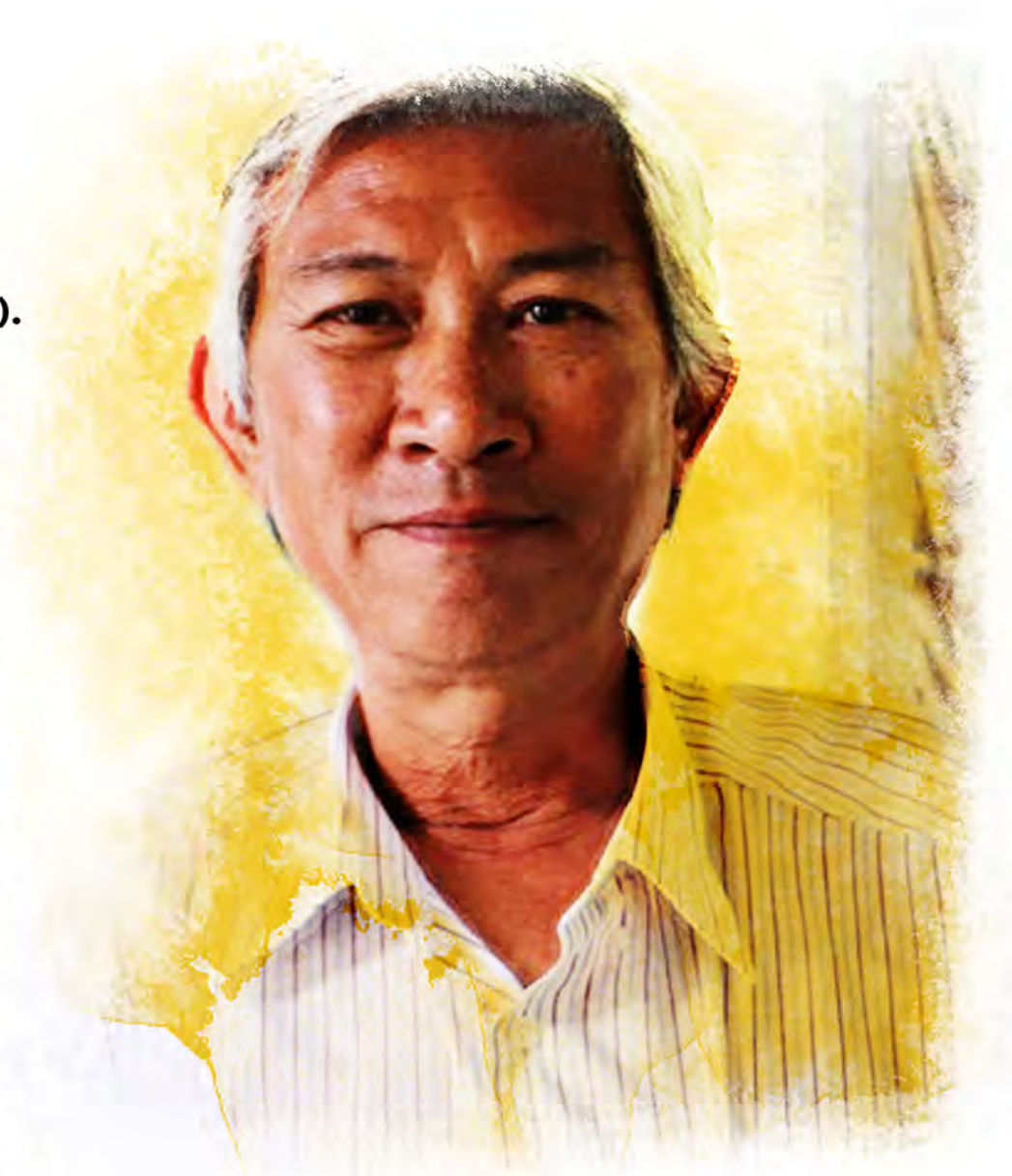
In Vietnam, Jayda meets Dr. Le Duc Tuan in a makeshift movie theatre. In the late 1960s, Le Duc was a 20-year-old film student studying in what was then called Saigon (Ho Chi Minh City).

During the Vietnam War, the Americans dumped millions of gallons of Agent Orange and other chemical defoliants on Can Gio's forests in an attempt to drive out the Viet Cong. The results were apocalyptic, 60 percent of the mangroves were wiped out, and Le Duc has film and photographic evidence: "You see," he explains, "by 1978 there wasn't a tree standing."

Once the Americans lost, the communists took over and Le Duc was drafted to regrow the mangroves. His only help were community volunteers - mostly women and children.

By the time the restoration was complete in 2000, Can Gio became recognised by UNESCO as a Biosphere Reserve, boasting biodiversity that had returned to pre-war levels. Le Duc, now in his 70s, takes Jayda on a tour of this magical place. Mangroves tower above the water, and fish, including lemon sharks, have their nurseries amongst the roots.

But in 2020, the Vietnamese government approved a USD \$9 billion "tourist city" development, potentially threatening the Can Gio Biosphere. Le Duc, along with 23 international environmental science groups has petitioned the Vietnamese government to protect the mangroves. But for now, the project is set to begin early in 2022.





IGNACIA DE LA ROSA PEREZ

'MOTHER OF THE MANGROVES.' COLOMBIA

It's a colourful journey through winding roads and throbbing market streets to San Antero, where Jayda meets Ignacia De La Rosa Perez - the mother of the mangroves.

Ignacia is the elder stateswoman of the Crispata Bay community of 12,000 people. She has been keeping track of the mangroves, compiling the largest, most extensive citizen study record that most scientists have ever seen. Binders and maps overflow with data, showing the changing water channels, deforestation and fishing records going back decades. The data tells a story of systemic destruction, and now, a remarkable reversal.

At 70, Ignacia has witnessed her environment change dramatically, and with it, her local community. She has seen young people leave in search of a better life elsewhere and others join the illegal drug trade and coca farming in a desperate attempt to earn a livelihood. For Jayda, Ignacia is a huge source of local wisdom and the gatekeeper of the mangroves.



ALIMATOU SARR

COMMUNITY ACTIVIST AND WHISTLEBLOWER, SENEGAL

Jayda travels to St Louis, an old colonial city reminiscent of Havana, Cuba. For Jayda, St Louis is a visual embodiment of the stark reality of climate change. The city is crumbling into the ocean, hundreds of homes hollowed out by the rising seas.

Shell-shocked by her visit and in search of hope, Jayda meets with community activist Alimatou Sarr. On a rickety bus, they travel to Niodior in the Sine-Saloum delta, a village at the heart of one of the largest mangrove reforestation projects in the world.

When Jayda and Alimatou arrive in Niodior, all is not what it seems. In 2009, a huge mangrove reforestation project was launched by a number of big French corporations to offset their excessive carbon emissions. Alimatou witnessed the first saplings being planted.

Despite the initial excitement, the project has been fraught with problems. Rife with corruption, the local women planting the mangroves remain severely underpaid and suddenly forest areas that they previously relied on for their livelihoods were now no-go zones. They were denied access to the lands and coastal areas they had fished and hunted in since the beginning of time. Ever since, Alimatou has been working to expose the flaws in the project and fight for the protection of the local villagers that rely on the trees in the Delta.

Jayda leaves Senegal knowing one thing for certain: for a blue carbon project to succeed, the local community needs to be at the heart of it.





BIANCA MCNEAIRR

ABORIGINAL RANGER. SHARK BAY, AUSTRALIA

Jayda peers out of the window of a small propeller plane. She's flying over the largest ecosystem of its kind in the world - seagrass meadows and crystal-clear waters stretch as far as the eye can see. She touches down in Shark Bay Airport, greeted enthusiastically by Bianca McNeairr, an indigenous Malgana ranger. The Malganas are saltwater people that have inhabited the bay for over 30,000 years.

Out in the shallow waters on a traditional fishing boat, Bianca tells Jayda that her cultural heritage is intrinsically tied to the protection of the seagrass. The ecosystem is extremely fragile and if destroyed, has the capacity to release millions of tonnes of carbon into the atmosphere.

This is what happened in 2011. A marine heatwave wiped out over one third of the seagrass in the bay. In turn, this destruction caused a "carbon bomb" - releasing up to 9m tonnes of carbon into the atmosphere - equivalent to 21% of Australia's annual emissions. Right now, Bianca is in the middle of a huge regeneration project, restoring the meadows to their former glory.

The project has encouraged endangered Dugongs to breed in record numbers. In an otherworldly moment, Bianca and Jayda scuba-dive in the turquoise waters and swim with the Dugongs.

INDIAN
OCEAN

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OUR MUSICIANS

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"THE INCLUSIVE MANIFESTO FOR DANCEFLOORS - AND OCEANS."

- The Guardian

"LIKE ALL THE BEST TEACHERS, JAYDA G IS LEADING BY EXAMPLE."

- Pitchfork

"JAYDA G'S RISE TO FAME HAS BEEN STUNNING."

- Resident Advisor

21 million +

Spotify streams worldwide

4 million +

iTunes streams worldwide

700k +

Spotify monthly listeners

100k +

Social media followers

30 +

Countries performed worldwide

JAYDA IS A PROTAGONIST THAT PROVIDES A REFRESHING CHANGE FROM WHAT WE TOO OFTEN SEE IN ENVIRONMENTAL FILMS.

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RZA

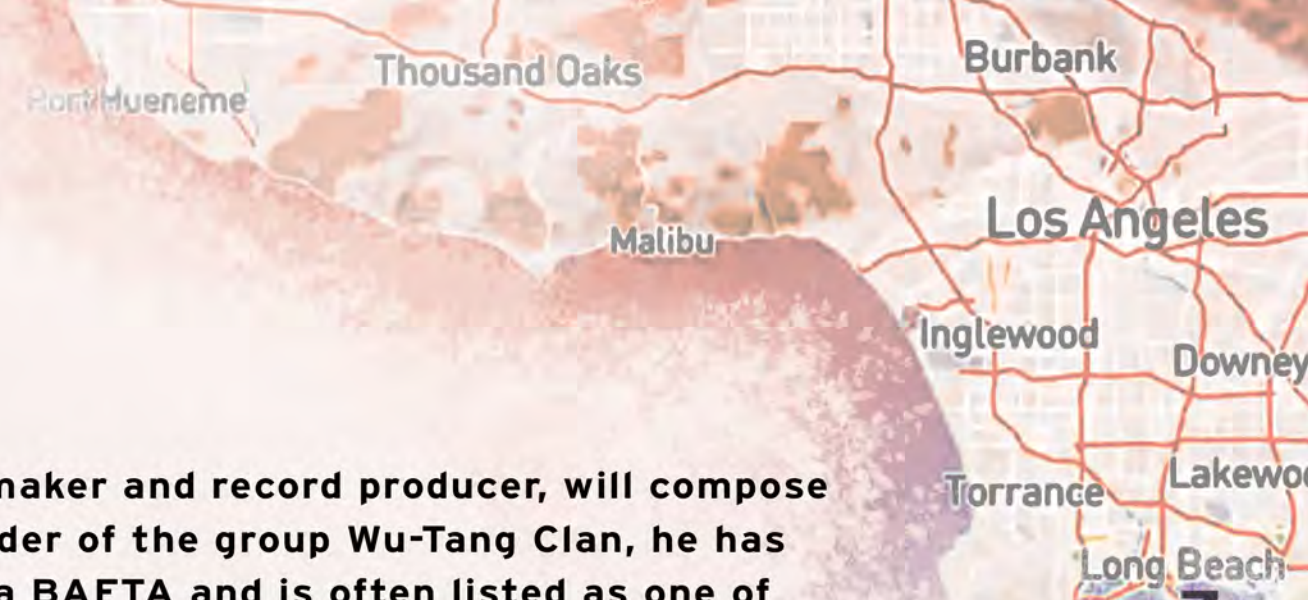
MUSICIAN. LOS ANGELES, U.S.A

RZA, the iconic American rapper, actor, filmmaker and record producer, will compose the film's score. The founder and de-facto leader of the group Wu-Tang Clan, he has been nominated for a Grammy, an Emmy and a BAFTA and is often listed as one of the greatest and most influential hip-hop artists of all time. Heavily involved in filmmaking since the 1990s, RZA has scored numerous films including Jim Jarmusch's *Ghost Dog: the Way of the Samurai* (1999), Quentin Tarantino's *Kill Bill: Volume 1* (2003) and *Kill Bill: Volume 2* (2004), and Hulu's *Wu-Tang: An American Saga* (2019).

RZA is excited about the film, especially the fact that it is a celebration of the power of musicians to make a difference, and the capacity of music to help widen our circle of compassion.

Working between his studio in the woods of New Jersey and his house in L.A, he intends to blend pulses, beats and percussion to match the unique vibe and culture of each location that Jayda travels to.

The musical direction of the film will be inspired by his song "The World of Confusion", a so-called samba track which speaks to societal problems faced around the world, including climate change.





SEU JORGE

MUSICIAN. RIO DE JANEIRO, BRAZIL

Seu Jorge is one of Jayda's greatest sources of musical inspiration.

In our film, Jayda is sharing the bill with Seu Jorge at the annual environmental music festival in Praia do Forte, on the Atlantic coast. The music is all about celebrating and protecting Brazil's whales and after the festival, Seu Jorge and Jayda go on an expedition to record whale-song. They are guided by the local NGO, Projeto Baleia Jubarte (Humpback Whale Project). Through their work, whales are being recognised as incredibly valuable in the fight against climate change.

Legendary Brazilian guitarist and singer, Seu Jorge, has collaborated with the likes of Beck and Thievery Corporation. He gained global exposure through his work as an actor in the critically acclaimed film, "*City of God*," directed by the Oscar-nominated Fernando Meirelles (our Executive Producer), and starred in Wes Anderson's, "*The Life Aquatic with Steve Zissou*," for which he provided much of the soundtrack.

Some of his music has up to 50m views on Youtube.



OUTREACH CAMPAIGN

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BLUE CARBON BLURS THE LINES BETWEEN ART AND SCIENCE,

engaging diverse audiences beyond echo-chambers in science-based solutions to our collective climate future. The film and surrounding educational impact campaign is scaffolded on peer-reviewed science communication strategies to increase curiosity, literacy, and behaviour change.

The characters and storylines offer a wealth of opportunity to bring the film to life beyond the screen, increasing representation of women scientists, elevating community-led conservation, and engaging non-traditional audiences in science through art and music. We anticipate that multimedia impact strategies and campaign activations across a global coalition of partners will elevate the film's message and calls to action for measurable education and advocacy outcomes.



A GROWING CHORUS OF HOPE

Our film will be in the unique position to leverage interest, build support and amplify a growing chorus of support for Blue Carbon.

Upcoming Blue Carbon related events include **COP26** (Glasgow; November 2021), the make-or-break world meeting that will decide all our futures and has Blue Carbon on the agenda, as well as **The Blue Carbon for Our Planet Bill** (USA; from January 2021), a bipartisan climate act that could unleash the potential of the USA's Blue Carbon reserves - if the bill can make it through challenges from the U.S. House of Representatives and the Senate.

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SCIENTIFIC ADVISORS

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DR. EMILY PIDGEON

LEAD SCIENTIST FOR THE BLUE CARBON INITIATIVE

Dr. Emily Pidgeon has dedicated her working life to understanding and proving the game-changing potential of Blue Carbon. After years of little interest, Emily and her team are finally getting traction and recognition and in 2021, she will lead a delegation to the biggest summit in climate history to try and persuade more and more countries that protecting our ocean and restoring the world's coastlines can have a huge impact. For Jayda, she serves as a reliable source of scientific knowledge throughout her journey.





PROF. CATHERINE LOVELOCK

WORLD-RENOWNED MANGROVE EXPERT

Professor Cath Lovelock has been at the forefront of the Blue Carbon movement. A marine botanist at the University of Queensland, Prof. Lovelock was recently named the 2020 Australian Laureate Fellow and awarded a grant of AUS\$3 million from the Australian Research Council to continue her work on Blue Carbon. Passionate about getting more women and girls involved in science, she enthusiastically supports Jayda's mission to make scientific research accessible and help people to reconnect with the power of the natural world.



DR. TRISHA ATWOOD

AQUATIC ECOLOGIST

Dr. Trisha Atwood leads a team of dedicated young scientists at the University of Utah's Aquatic Ecology and Global Change Lab. Her research has taken her all over the world with studies in Hawaii, Canada, Costa Rica and Australia. Most recently, she has investigated the vital link between marine wildlife and Blue Carbon, and how important the protection of marine predators, such as sharks, is in maximising the potential of Blue Carbon ecosystems.



A cinematic landscape at sunset. In the foreground, a person is silhouetted while operating a professional video camera on a tripod. The camera is pointed towards the horizon. In the distance, another person is silhouetted while walking across a ridge. The sky is filled with dramatic, layered clouds, and the sun is a bright, glowing orb on the right side of the frame, casting a warm, golden light across the entire scene. The overall mood is serene and professional.

OUR TEAM

MAKE WAVES



FERNANDO MEIRELLES

EXECUTIVE PRODUCER

Fernando Meirelles is the renowned Brazilian, Oscar-nominated Director of *"City of God," "The Constant Gardener"* & *"The Two Popes,"* and has been nominated for more than 10 BAFTAs, Golden Globes and Oscars. Fernando executive produced MAKE Waves' 2019 film, *"The Great Green Wall,"* and is currently working on his next film for Netflix about the climate crisis as seen from the youth perspective.

Outside of cinema, Meirelles is also a farmer. He plants sugar cane, coffee, palm heart, avocado, and mahogany. He is developing ways to produce these organically on a large scale.

Agroforestry is his bet. In the next few years, his plan is to be involved in projects related to the environmental crisis and climate emergency. Meirelles is very concerned about the future planet his grandchildren will inherit.





NICOLAS BROWN

DIRECTOR

Nicolas Brown is one of the UK and USA's leading documentary filmmakers. His latest film for cinema release, *"The Serengeti Rules,"* has won 23 major awards at festivals around the world, including an Emmy for Outstanding Nature Documentary.

Nicolas' other films have won three additional Emmy awards, two BAFTA awards, and over 50 major festival awards in the USA, China, India, and Europe.

For the past seven years he has worked for Passion Pictures as creative director of Passion's Blue Media Lab (a conservation think-tank). A regular at the BBC, Nicolas directed the award-winning *"Earth's Natural Wonders,"* two BAFTA-winning episodes of *"Human Planet,"* and the multi-award-winning *"Climate Chaos with Sir David Attenborough."*



SARAH MACDONALD

MAKE WAVES FOUNDER & EXECUTIVE PRODUCER

Sarah Macdonald is a New Zealand born, BAFTA-winning Director and Filmmaker. In 2012 she set up MAKE Waves with ex-BBC World News CEO, Sian Kevill, as an internationally-focused, independent film and television company based in Singapore and London.

Since then, the company has gone on to create multi-award winning content for the BBC, Channel 4 UK, HBO, CNA, Al Jazeera, A+E, Bloomberg and Channel 5 UK. Its most recent production, the feature-length environmental film, *"The Great Green Wall,"* premiered at the Venice Film Festival (Giornate degli Autore) in 2019 and has since screened at numerous festivals across the Globe, winning multiple awards, including the EarthX Film Impact Award and the Audience Choice Award at the São Paulo International Film Festival.



MAKE WAVES





SEAN B. CARROLL

HEAD OF TANGLED BANK STUDIOS & EXECUTIVE PRODUCER

An internationally recognized scientist, award-winning author, and Emmy-winning executive producer, Carroll is the architect of HHMI's filmmaking initiative to bring great stories about science and scientists to broad audiences. He has served as executive producer on a wide variety of feature documentaries, IMAX, and short films. As leader of HHMI's Department of Science Education, Carroll also oversees the largest portfolio of privately supported science education activities in the United States.

Sean Carroll is a pioneer in the field of evolutionary developmental biology or "evo-devo," the study of the genes that control animal body patterns and play major roles in the evolution of animal diversity. In recognition of his scientific contributions, Carroll has received the Benjamin Franklin Medal in Life Sciences, been elected to the National Academy of Sciences and the American Philosophical Society, and been named a Fellow of both the American Academy of Arts and Sciences and the American Association for the Advancement of Science.



DAVID ELISCO

EXECUTIVE PRODUCER

David Elisco manages the development and production of a portfolio of films for HHMI Tangled Bank Studios, focusing on feature-length documentaries. In his work, he is drawn to dramatic stories that touch the heart, inspire wonder, and provide insight into life on Earth.

Most recently, Elisco served as executive producer on the Peabody Award-winning film *"Inventing Tomorrow,"* the Emmy-winning *"The Serengeti Rules,"* and the recently released and critically acclaimed *"Oliver Sacks: His Own Life."*

For much of his career, Elisco served as an award-winning writer, producer and director. His own films and those he's served as an executive have appeared on Netflix, Amazon Prime, PBS, National Geographic, Discovery, Smithsonian Channel and NBC.





PHILIPPE DE BOURBON

EXECUTIVE PRODUCER

Philippe de Bourbon used to work at CANAL+, the French-leading pay-tv network. While there, he acted as commissioning editor, in charge of co-productions and acquisitions of documentaries, including the Oscar-nominated documentary *The Invisible War* and International Emmy Award-nominees, *Terror Studios* and *Exodus*.

In 2017 he joined Echo Studio - a content studio dedicated to the production and distribution of films addressing social and environmental issues - as partner and managing director. Philippe recently left Echo Studio to start his own production company, Andaman Films.

The State of Texas vs Melissa, the story of one of the few women on death row in Texas, is his first film under the new banner and premiered at the 2020 Tribeca Film Festival.



CLAUDE GRUNITZKY

EXECUTIVE PRODUCER (MUSIC)

Claude Grunitzky is the founder of TRUE Africa, a media platform funded by Google's Digital News initiative. Claude's previous media venture, the TRACE brand, is now being leveraged globally across various television, event and interactive platforms and reaches more than 200 million people across 150 countries.

Claude was raised between Lomé, Togo; Washington, DC; Paris; London and New York. He speaks six languages and carries three passports. A graduate of MIT, Claude is a trustee and the chairman of the Institutional Advance Committee at MASS MoCA and a trustee at Humanity in Action, a foundation that works internationally to build global leadership, defend democracy, protect minorities and improve human rights.





SARAH HAMILTON

PRODUCER

Sarah Hamilton is a BAFTA award-winning documentary producer with 25 years of production experience. She has produced and directed a wide range of documentaries for television and cinema release. Making films all over the world, she has specialised in human stories that have wider social and political resonance.

She is passionate about telling powerful, female led stories. Her most recent documentary feature, "*Williams*," was nominated for Best Documentary at the British Independent Film Awards in 2018 and was subsequently released globally on Netflix.

TIM CRAGG

DIRECTOR OF PHOTOGRAPHY

Tim has photographed 10 theatrical feature films and numerous television documentaries.

In 2018 his feature film, "*Three Identical Strangers*," won an award at Sundance and was nominated for a BAFTA.

In 2019 he filmed "*The Great Green Wall*," which premiered at Venice Film Festival. In the same year his films, "*Armstrong*" and "*The Serengeti Rules*" both premiered at North American cinemas. Tim has won a BAFTA for cinematography, and has received nominations for two other BAFTAs and two Emmys.

Six films that Tim photographed have won BAFTAs for Best Film and three films have been nominated for Emmys.



SUPPORTING SCIENTIFIC PAPERS

**Muis, S., Verlaan, M., Winsemius, H. et al. A global reanalysis of storm surges and extreme sea levels. Nat Commun 7, 11969 (2016).
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<https://www.middlebury.edu/institute/sites/www.middlebury.edu.institute/files/2020-08/OCAP%20Report_R3_REV_Webview.pdf?fv=DXjxSUFO>
[Accessed 26 October 2020].**

**Cormier-Salem, M. and Panfili, J., 2016. Mangrove reforestation: greening or grabbing coastal zones and deltas? Case studies in Senegal. African
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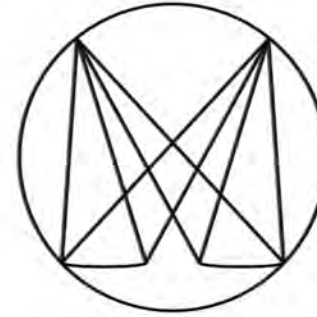
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