

1ST QUARTER PROGRESS REPORT

2023



KELP FOREST
FOUNDATION

TABLE OF CONTENTS

	Page
Q1 Highlights	3
Research progress	4
Ocean literacy	14
Awareness	23
Other news	31
Financials	38

Q1 HIGHLIGHTS

January



New Scientific Advisor (carbon): Finn Ross

Start of Falkland Islands 1st ever eDNA biodiversity survey



February



Congress in Tasmania: International Seaweed Symposium

Funding secured and kick off of 3-year study on the Impact of giant kelp biostimulants on crops and soil health



March



Algal Workshop: Cawthron Institute, NZ

Results on kelp biomarker study from Emilia Heiskanen: Sterols could be a (more) promising biomarker for giant kelp than lipids



Monaco Ocean Week: Seaweed: Reality vs Hype

KFF's Offshore Kelp Cultivation as Carbon Sink project endorsed as part of UN Decade of Ocean Science for Sustainable Development



New Scientific Advisor (biodiversity): Dr Ian Henny



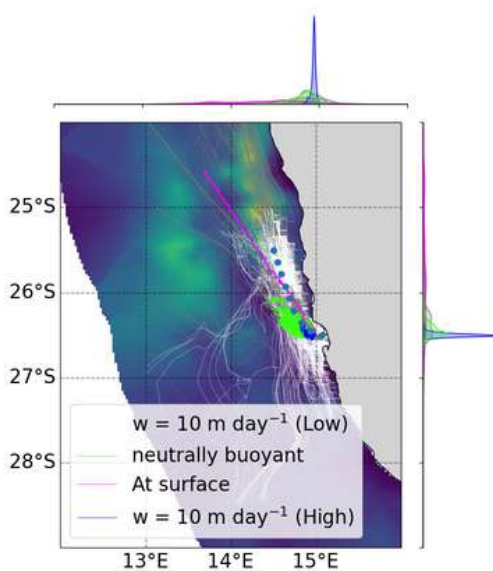


RESEARCH PROGRESS

BLUE CARBON SEDIMENTS COLLECTION

Our research aimed at quantifying the carbon sequestration capacity of cultivated kelp involves several steps and numerous research institutions. This initial stage of this blue carbon study will create an important baseline study of the existing organic carbon in the sediments along the Namibian shelf which will serve as a basis for future comparison.

The first step of our study is the **kelp carbon model** created by Drs. Taylor and Li from Cambridge University. The model helps us identify the dispersal path of the kelp detritus coming from the Kelp Blue farms and dictates, together with University of Bremen's already identified "depocenters" (sites of maximum deposition), the sediment coring sampling points. Drs Fu and Rivera Rosas from KAUST together with Mr Liswaniso and Mr Mutjida of UNAM will then collect **sediment core samples** using the purchased multicorer mounted on a vessel. These fresh samples, together with previous samples taken by University of Bremen, will be **analysed for kelp carbon using biomarkers**, by both KAUST and ETH Zurich (Dr Paradis). In addition, we are incredibly excited that the International Atomic Energy Agency (Dr Masqué) has offered to **date the marine sediments** which will determine kelp-carbon accumulation rates and the longevity of kelp carbon sequestration.



Dispersal model by Cambridge University and sediment sampling points



Clockwise: Dr Pere Masqué (IAEA), Mr Gadaffi Liswaniso (UNAM), Xu Ben Zhang (KFF), Dr Ke Li & Dr John Taylor (Cambridge University), Dr Sarah Paradis (ETH Zurich), Samantha Deane (KFF), Dr Diego Rivera Rosas (KAUST), Dr Chuancheng Fu (KAUST) & (center) Mr Protasius Mutjida (UNAM)



BLUE CARBON PHD CANDIDATE SELECTED

Meet Gadaffi Liswaniso



Gadaffi was selected to receive a scholarship from KFF to undertake his doctorate on the role of farmed giant kelp in blue carbon sequestration and ecosystem functioning, using the Kelp Blue farm in Namibia as a case study.

He is registered at the University of Namibia (UNAM). His supervisors within UNAM are Prof. Akaha Tse and Dr Absai Vatuva and he is also incredibly lucky to also be co-supervised by renowned blue carbon expert, Dr. Carlos M. Duarte from King Abdullah University of Science and Technology (KAUST).

Gadaffi has a Master's of Science degree in Fisheries Resources and 10 years working experience as a researcher and lecturer at UNAM. He has a strong biotechnology background and a passion for scientific innovations. He is a specialist in molecular microbiology and has done a lot of work in culturing microbes, DNA extraction, PCR, and Gel Electrophoresis. In addition, he participated in various funded projects where he studied biodiversity of flora and fauna along the Namibian coastline, worked on benthic biodiversity and did an inventory study of benthic fauna between Swakopmund and Henties Bay. In his spare time he enjoys recreational fishing, offroad driving (4x4) and camping.

Gadaffi will be working closely with Dr Chuancheng Fu and Dr Rivera Rosas of KAUST in the collection and analysis of sediment cores. He has also been offered an internship at KAUST for 5 months which will be co-funded by KAUST and KFF - an incredible opportunity to learn more about the biochemical aspect of carbon including stable isotopes using the sediment samples collected in Namibia.



BLUE CARBON

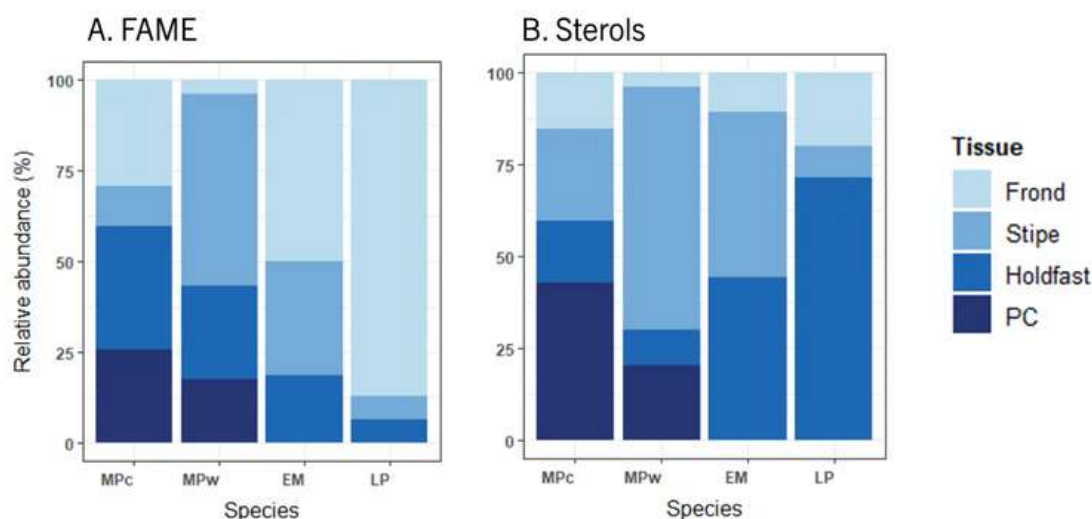
LIPID BIOMARKERS RESULTS

During the past months Emilia Heiskanen, MSc student Marine Sciences at Utrecht University, worked on the preliminary investigation of "**Macroalgal contribution to blue carbon using organic lipid biomarkers**". The importance of this research lied in "fingerprinting" the carbon burial capacity of three seaweed species found in Luderitz: *Macrocystis pyrifera* (giant kelp), *Ecklonia maxima*, and *Laminaria pallida*. **Her conclusions were that, unlike the lipids (fatty acids), fucosterol had the potential to be a biomarker for brown seaweeds**

Findings of her research:

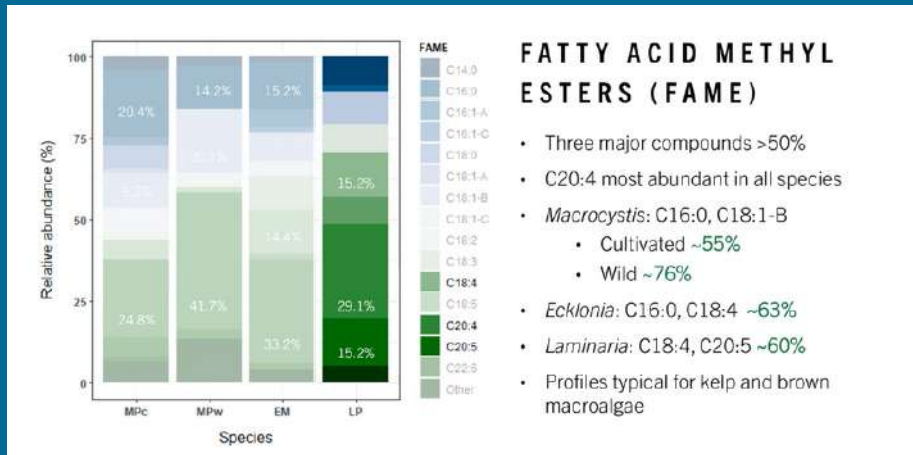
- The majority of compounds found were fatty acids (FAME) and sterols.
- There were found only a few FAMES and they were common across different taxa so not suitable as biomarkers
- **Fucosterol, although found in all three macroalgal species, had a high abundance and traceability which highlights its potential as a biomarker for brown macroalgae (but further research is needed).**
- Kelp seems to support the marine food web (as carbon donors) at the study sites, there is no direct carbon burial seen (43% NPP export)
- Fucosterol might also be found in sediments --> Potential future study: Can fucosterol trace **brown macroalgae in deep offshore sediments?**

LIPID COMPOSITION IN KELP TISSUE

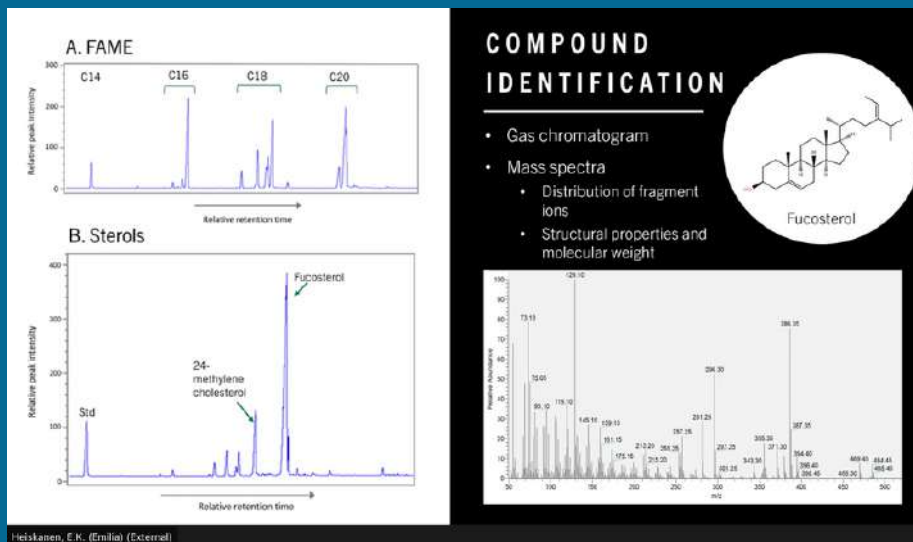


Overview of the fatty acid methyl esters (FAMES) and sterols composition in kelp tissue; *Macrocystis pyrifera* cultivated (MPc) shows most FAMES in the holdfast of the kelp and most sterols in the pneumatocyst (PC), while *Macrocystis pyrifera* wild (MPw) shows most FAMES and sterols in the Stipe.

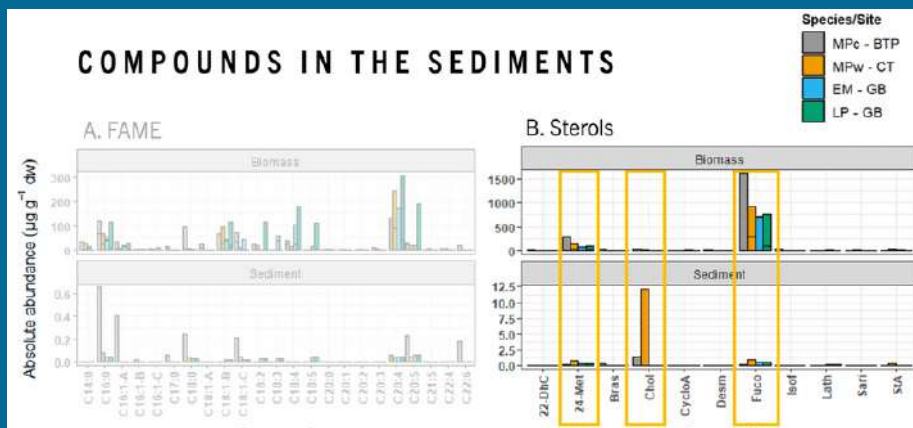
BLUE CARBON LIPID BIOMARKERS RESULTS (Cont.)



The relative abundance of fatty acid methyl esters (FAME); showing C20:4 to be most abundant in all species



The gas chromatogram showing FAMES and Sterols detected in the biomass of the macroalgae



Overview of the sterol compounds found in the sediments. Fucosterol was present in biomass of all macroalgae species. In addition, they were also found in small amounts in the sediment.

BLUE CARBON UN OCEAN DECADE ENDORSEMENT

In March of this year, our research project "Offshore kelp cultivation as an ocean sink" has been endorsed by the IOC Executive Secretary as part of the UN Ocean Decade.



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
COMMISSION OCÉANOGRAPHIQUE INTERGOUVERNEMENTALE
COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ
اللجنة الدولية الحكومية لعلوم المحيطات
政府间海洋学委员会

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Ref. : IOC/VR/23.093/JB/AC/mb

9 March 2023

Dear Ms Deane,

It is with great pleasure that I am writing to inform you of the endorsement of your Decade Action entitled "No. 21.3. Offshore kelp cultivation as a carbon sink" as a project forming part of the UN Decade of Ocean Science for Sustainable Development 2021-2030. Please accept my sincere congratulations for this achievement. Let me also thank you for your engagement and commitment to the Ocean Decade vision of the science we need for the ocean we want.

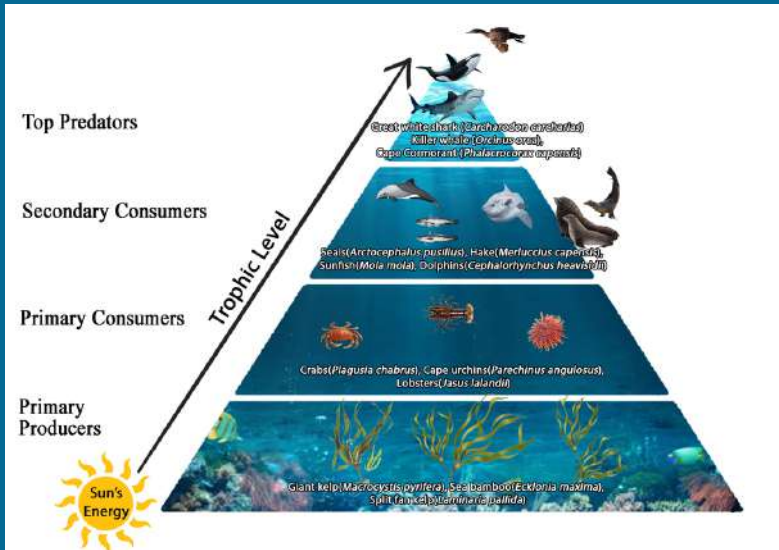
Within the structure set out in the Ocean Decade Implementation Plan, individual projects are typically attached to endorsed Decade programmes. In your case, there are not yet any Decade programmes to which your project can be attached. Such programmes may emerge over time, but in the meantime we encourage you to engage actively in the Communities of Practice that are described below to facilitate collaboration and synergies.

As you further develop and start implementing your project, we would like to remind you of the Ocean Decade endorsement criteria, including those related to co-design, engagement of users all along the ocean science value chain and decision and policy makers, and those related to open and accessible data management. As an endorsed Decade Action, we expect you to adopt these principles and approaches in your Decade project and to engage via the Communities of Practice that are described below to share experiences and access information and tools on these approaches. We have also attached [here](#) a publication from the Ocean Decade on co-design approaches that may prove useful in this regard.

...

Ms Samantha Deane
Kelp Forest Foundation
Netherlands
E-mail: samantha.deane@kelpforestfoundation.org

BIODIVERSITY EDNA STUDY NAMIBIA



Our MSc students further analysed the eDNA biodiversity data obtained from NatureMetrics. They created a trophic level pyramid where the identified Namibian species that were detected based on the eDNA surveys at the kelp blue sites were placed within the food web with primary producers such as *Macrocystis* as the bottom and top predators such as sharks at the top.

The research team also created a poster with the most important Namibian species detected through the various monitoring methods. This list identifies

- **commercially important species** such as hake and horse mackerel;
- **keystone species** (which help define a entire ecosystem) such as the Humpback Whale and Heaviside Dolphin;
- **flagship species** (which act as a symbol for the habitat) like the African Penguin and Cape Fur Seal;
- **indicator species** (which serve as a measure of the environmental conditions) such as jellyfish, and lastly
- the **ecosystem engineers** such as the kelps.

The poster is titled 'Namibian Important Species Detected at Kelp Blue Sites' and features a 'kelp blue' logo. It is organized into several sections:

- Commercially Important Species:** Includes images of various fish and a seal. Below the images are details for 145 931 MT Landings (MFM 2013).
- Keystone Species:** Includes images of a whale, dolphin, fish, squid, seal, and bird.
- Flagship Species:** Includes images of a penguin, whale, fish, dolphin, seal, and bird.
- Indicator Species:** Includes images of jellyfish and other organisms.
- Ecosystem Engineering Species:** Includes images of kelp and other large marine plants.
- Sites map:** A map of the Namibian coast showing the locations of the Kelp Blue sites.

Focusing on these key species will help us to effectively track changes in the ecosystem.

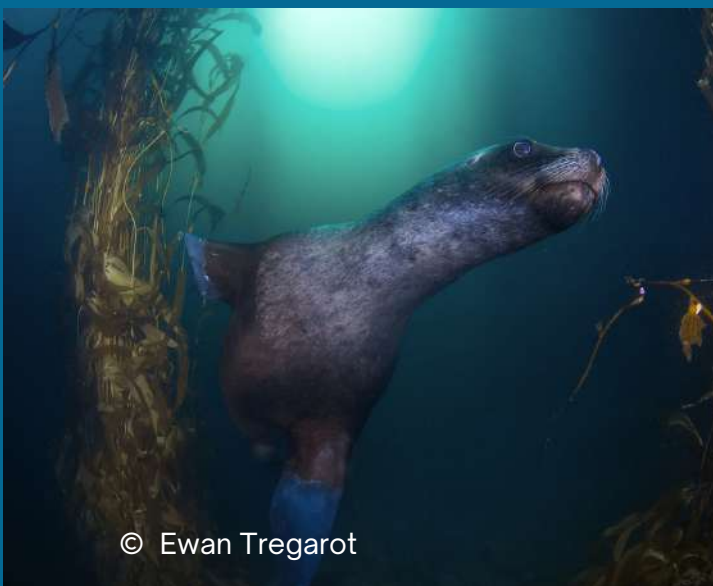
BIODIVERSITY EDNA STUDY FALKLANDS

We are excited to announce that we have funded the first ever environmental DNA (eDNA) study of some of the most pristine and remote giant kelp forests in the world - those found in the Falkland Islands.

Led by Dr Narissa Bax at the SAERI (South Atlantic Environmental Research Institute) and with the help of scientists from University of Aberdeen, multiple water samples were collected from different points and depths in the kelp forests around the two islands. This water was then passed through filters that collected the DNA of marine organisms, without having to capture or disturb the animals living within the ecosystem. These filters are currently being analysed by NatureMetrics who will be able to identify a wide range of species using DNA sequencing methods. Watch this space for the results to come.



With this groundbreaking study we aim to collect a large amount of data using eDNA, obtain a genetic footprint and a more detailed picture of these untouched ecosystems and their biodiversity, particularly in the remote and seldom-sampled locations of these islands. As Dr Bax says, "This comprehensive understanding will complement existing research, allowing us to refine our conservation strategies and address any potential threats more effectively. The eDNA analysis can detect the presence of various species, including those that are difficult to observe directly. Some of the detected species maybe previously unknown in the Falkland Island kelp forests, highlighting the power of eDNA analysis to uncover hidden biodiversity."



© Ewan Tregarot



© Ewan Tregarot

EMISSIONS REDUCTIONS BIOSTIMULANT RESEARCH

We are incredibly proud to announce that we have secured funding for a 3-year post-doctoral research study on the **potential of giant kelp biostimulants to increase crop resilience against abiotic stress and improve the soil microbiome** which in turn can also help reduce synthetic fertiliser. This is part of our Avoided Emissions research focus.

The study

The Laboratory of Plant Physiology at **Wageningen University**, rated one of world's best agricultural universities in the world, began in February a postdoc research project on the characterisation and quantification of the mechanisms of giant kelp biostimulant on plant physiology. The aim of this research is to identify how the application of seaweed biostimulants affects plant performance and root system architecture, to elucidate the molecular mechanism of action by which SE affects plant plasticity and adaptation and to identify how the application of the biostimulant changes the soil/root microbiome in order to help the plants to survive abiotic stress.

Nestlé Purina: research sponsor

As part of their carbon footprint reduction programme and road towards net zero, Nestlé is interested in reducing the impact of its supply chain, which includes the impact of the cereal farmers that produce Purina's pet food. We are excited to announce that Nestlé will be funding this groundbreaking research on giant kelp biostimulant on plant performance, as well as its impact on the soil microbiome.



OCEAN LITERACY

An aerial photograph of a small white boat with a colorful interior, navigating through a dense kelp forest in clear turquoise water. The boat is connected to a large white buoy by a rope. The kelp forms thick, dark green walls on either side of the boat. The overall scene is serene and emphasizes the beauty of the ocean environment.

OCEAN LITERACY

2023 PSSA

Our MSc scholar, Angelique Dodds, together with Ukarapo Mungunda were sponsored by KFF to attend the 2023 Physiology Society of Southern Africa conference held January in Cape Town. There they presented the Lüderitz baseline and early findings of their study "Biodiversity and Carbon impacts of Giant Kelp cultivation: A potentially powerful new nature-based solution".



Ukarapo Mungunda

Ukarapo Mungunda spoke of her use of hydroacoustics to identify fauna such as dolphins in the cultivated kelp forest off the coast of Lüderitz, Namibia. Using bioacoustics Ukarapo can tell when they visit, when they are most chatty and when they feed. By applying deep learning algorithms which are trained to isolate and distinguish one species from the next she can identify which sound-emitting animals are visiting the kelp forest.

Angelique Dodds on the other hand explained how we utilise eDNA (environmental DNA) to assess the impact of the kelp forests on existing ecosystems. She is creating an algae baseline study which will help us understand the impact of the cultivated kelp forest on existing algal communities.



Angelique Dodds

They did us proud and came back with the award for the best "Applied presentation for the potential/commercial use of seaweed". We are proud of you ladies!!

OCEAN LITERACY

LUDERITZ STRANDCUBS

As part of our ocean education programme, Strand Cubs - a group of children in Lüderitz, aged from 8 to 12 - meet every week to share their passion for the ocean and protecting the natural environment and to learn the skills they need to become the marine biologists and engineers of the future.

The young explorers of the Lüderitz-based "Strandcubs" visited the Kelp Blue site at Shearwater Bay where the first cultivated giant kelp (*Macrocystis pyrifera*) in Namibia is now flourishing and visible at surface. They saw dolphins swim next to the boat, loads of sea birds as well as the penguins that live in Halifax island. They also learnt about the dangers of overfishing and the importance of maintaining harmony in the ocean ecosystem.

On another trip the Strand Cubs had a great time learning about the importance of animal care and the power of compassion at the local animal rescue centre, SPCA. They got to see the animals up close and learn about the great work the organization does.



OCEAN LITERACY BLUE HOUSE PROGRAMME

The old Blue House in Lüderitz, belonging to the Stuchtley family, is being turned into a centre of excellence and opportunity.

As of June 2023, the Blue House will act as office, library, and home all at once. It will host our Namibian MSc scholars who will live and study there while working on their scientific research in the Kelp Blue's cultivated kelp forests. We will twin them with peers from leading Universities abroad who will undertake internships at Kelp Blue as well as Namibian apprentices, to foster knowledge transfer and develop scientific and practical talent in natural ecosystems. The ultimate objective is to foster knowledge exchange and deliver climate and social impact. Graduates of this programme will enrich the Namibian and Southern African talent pool with the new skillsets required for a future where humanity and nature coexist in better harmony. We hope the bright graduates of this programme further their careers in government, business, entrepreneurship, and academia.



Meet the 2023 MSc scholars

Arisha September



MSc TITLE: BASELINE STUDY OF THE EXISTING FAUNA ECOSYSTEM IN AN AROUND THE KELP BLUE PILOT FARM

Arisha has just completed her undergraduate studies at the University of Namibia under the department of Fisheries and Ocean Sciences.



- Arisha's slogans are:
- Humanity has no boundary
 - If times change, we change ourselves too
 - Give a man a fish, you feed him for a day. Teach him how to fish, you feed him for lifetime
 - The future is female



From a young age I have realized that education is my only key towards a better future for myself and my family to ensure that I can contribute towards eliminating the struggles faced by my family generation after generation. I am the first of my Family to obtain my tertiary education qualification.



BLUE HOUSE PROGRAMME

Beata Tooleni

MSc TITLE: IMPACT OF KELP BLUE'S PILOT FARM ON THE BENTHIC BIODIVERSITY



Beata is a graduate from graduate from the University of Namibia, B.Sc. Fisheries and Aquatic Sciences.

Beata's slogan is to be "happy with what you have while working for what you want". She says has learned to accept and live by what she has, make the most of it and create memories while working on achieving greater. She has come to really understand that "Rome was not built in one day" and it has made her proud of her "hustles in life".



"My overall career goal is to work in research groups to improve research and human resource capacity at the same time improve my skills through training and I believe Kelp Blue and the Kelp Forest Foundation provides the best platform for me to do so. "

Beata loves reading narrated stories and playing netball. She is a fan of volleyball and would love to learn how to play it. She enjoys doing presentations in public and in her free time she loves doing business.



Michael Ndinomwene

MSc TITLE: CALCULATING THE NET PRIMARY PRODUCTIVITY OF GIANT KELP AT THE KELP BLUE PILOT FARM.



Michael is has recently graduated with a Fisheries and Aquatic Sciences Honours degree from the University of Namibia

Michael believes in "The Magic of Thinking Big". It taught him to "stop making excuses "and work hard to do better in life, to build his confidence and to think creatively.

Michael's hobbies are swimming, fishing, angling and playing soccer. He is passionate about "aquaculture, conserving the marine ecosystem and protecting nature as well as the environment in general".



“

"I am excited about joining the Kelp Blue team because I am passionate about aquaculture in which mariculture such as giant kelp farming falls under and some of the main reasons for farming the giant kelp is to re-wild the oceans in order to recover the marine ecosystem, to sequester carbon in order to protect the earth from global warming and to promote the use of natural biodegradable products in order to protect the environment which are very close to my heart and I am going to do this with love".

Michael slogans are:

- Everything is possible. As long as I believe in myself I can do anything.
- I am obsessed to progress. I always want to do something productive each and every day.
- I never stop learning because life never stops teaching, I like learning about new things.
- I want to touch the heart of the world and make it smile, I am mostly smiling.



Meet the 2023 Interns



2023	Candidate	Period of internship
Q1	Madeleine Tresselt	15 Feb - 15 May 2023
	Marco Ajmar	15 Feb - 15 May 2023
Q2	Zoe Molder	01 April – 30 June 2023
	Marthje Hannah Schüler	01 April – 30 June 2023
Q3	Skye Brown	19 June – 30 September 2023
	Asier Indart	19 June – 30 September 2023
Q4	Jip Gravenberch	18 September – 31 December
	Mafalda Isidro	18 September – 31 December



Madeleine is from Byron Bay, a small town on the east coast of Australia. She spent a lot of time at the beach growing up and enjoys surfing, kayaking and diving. Through these endeavours, she developed a love for ocean exploration and a passion for marine conservation. She has recently completed a Bachelor of Marine Science and Management with Honours in marine turtle research.

Marco holds a Master's degree in Environmental Science: Atmosphere-Biogeochemistry-Climate Change from Stockholm University. He has an Advanced Open Water PADI diploma and is a keen triathlon competitor.



Zoe is currently studying to obtain an international MSc in Marine Biological Resources (IMBRSea) run jointly by the University of Faro in Portugal/Polytechnic of Marche in Italy. With this internship she is looking to gain practical experience in the field of marine habitat conservation and restoration.

Marthje has just completed her International Master of Science in Marine Biological Resources (IMBRSea) at the Universidade do Algarve. She is a PADI certified DiveMaster and is a Young Ocean Leader for the Sustainable Ocean Alliance.



Meet the 2023 Interns

BLUE HOUSE PROGRAMME



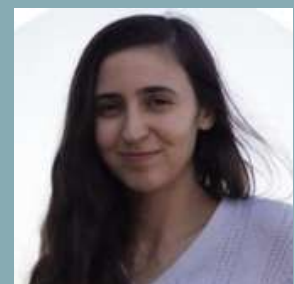
Skye is a graduate student at Universitat Autònoma de Barcelona (UAB-ICTA) where she obtained an MSc in Environmental, Economic and Social Sustainability. She holds an Advanced Open Water Diver diploma and has volunteered in the Billion Oyster Project.

Asier is a graduate of the Università Politecnica delle Marche and has a Master's degree in Marine Biological Resources. He is currently researching the kelp forest survival to thermal stress at their southern limit in Mexico.



Jip graduated from Delft University of Technology with a Master's degree in Civil Engineering. He is a water resource engineer who is passionate about responsible seaweed cultivation.

Mafalda graduated Magma cum Laude from her IMBRSea MSc. She is interested in studying the effects of environmental change and human impacts on marine ecosystems and biodiversity, mainly on macroalgae. She also holds a Marine Ecology diploma from SSI (Scuba Schools International).



AWARENESS

INT. SEAWEED SYMPOSIUM (ISS) AUSTRALIA

The prestigious International Seaweed Symposium (ISS), which is held every 3 years, took place at the end of February in Tasmania, Australia. Over 500 seaweed science and industry experts gathered in Hobart to talk about seaweed protection and potential. Around 200 presentations were given by top researchers and companies discussing the climate change impacts on seaweeds and finding solutions to these as well as production and processing techniques, and product development.

Samantha spoke about our research conducted by Wageningen University to uncover the molecular impact of giant kelp biostimulants on plants and their effects on the soil biodiversity. She also spoke about what is driving the demand for kelp-based biostimulants. In addition, she spoke about our work with NatureMetrics using eDNA to map the biodiversity in global giant kelp forests, wild and cultivated. She presented the first ever eDNA research to map marine biodiversity in the Falkland Islands for which we are collaborating with NatureMetrics and the South Atlantic Environmental Research Institute (SAERI).

Samantha also participated in the Kelp Forest Alliance workshop where Aaron Eger, its programme director, launched the KelpForestChallenge. The Challenge is calling upon society to restore 1 mln and protect 3 mln hectares of global kelp forests by 2040. The global movement has brought together 450 people from 25 countries to achieve this. Our foundation has pledged its eDNA biodiversity data which we are looking to collect from giant kelp forests globally.

The Symposium has a 75-year history and will next be held in 3 years time in British Columbia, Canada.



CAWTHRON INSTITUTE NEW ZEALAND

Following on from the ISS, Samantha visited New Zealand. She participated and presented in an Algal workshop organised by Dr Johan Svenson at Cawthron Institute with a great group of micro/macroalgal experts such as Alejandro Buschmann and Charles Yarish, producers, processors and product makers from all over the world.

From Nelson she travelled to Wellington where she also visited the National Institute of Water and Atmospheric Research (NIWA) and their amazing team of researchers that are focusing on kelp carbon. Dr Scott Nodder and Dr Roberta d'Archino showed her their kelp restoration "nursery".

In Christchurch, Samantha met with co-patriot Prof. Pablo Gregorini at Lincoln University. They discussed the use of cultivated kelp as feed supplement for grass-fed animals and its potential beneficial effects on animal, human and planetary health. Samantha was incredibly impressed by the quality of the research talent in NZ and looks forward to cooperating in many research projects with them in the near future.



Anastasija Zaiko

NATIONAL INSTITUTE OF
WATER AND ATMOSPHERIC
RESEARCH LTD

Roberta d'Archino



Scott Nodder

Charles Yarish Alejandro Buschmann



MONACO OCEAN WEEK MONACO

The Kelp Forest Foundation and the Institut Océanographique, Fondation Albert 1er, Prince de Monaco co-hosted a great morning dedicated to seaweed where the speakers described the realities and updates of their seaweed-related businesses and research. The session was called SEAWEED - REALITY VS HYPE and it took place in the beautiful conference room on the Oceanographic Museum of Monaco.

This 3rd edition on seaweed was opened by Robert Calcagno, CEO of the Institut Océanographique, Fondation Albert 1er, Prince de Monaco and renown Australian scientist, Professor Tim Flannery. Tim has been long interested in drawdown and it was in this context that he started investigating the potential of seaweed to mitigate climate change.

The first presenters were from Kelp Blue (Daniel Hooff) and Ocean Rainforest (Olavur Gregersen). After that Brian Tsuyoshi Takeda spoke about his win-win solution, where his company Urchinomics harvests kelp-eating urchins for food which helps, in turn, to restore kelp forests.

Next, Notpla (Rodrigo García González) and Nestlé Purina PetCare Europe (Kerstin Schmeiduch) presented, which are two private companies that are accelerating the development of the algae market by using kelp in their products and supply chains to replace more harmful equivalents, like plastics and synthetic fertilisers respectively - supporting the transition to a more sustainable economy.

Moreover, Vincent Doumeizel, senior advisor of the United Nations Global Compact, presented the re-branded "Global" Seaweed Coalition and its three 2023 action pillars Funding, Advocacy and Science.

The last session was dedicated to the science. Philippe Potin from Station Biologique de Roscoff and our MD Samantha presented their research on the impact of cultivated (and wild) kelp forests on biodiversity for their respective projects which are showing positive results. Samantha presented an exciting new project in some of the most pristine kelp forests in the world: eDNA study Falklands.

INVITATION

INSTITUT OcéANOGRAPHIQUE MONACO

KELP FOREST FOUNDATION

menaco ocean week

SEAWEED - REALITY vs HYPE
ALGUES MARINES - UNE RÉALITÉ OU UN BUZZ TEMPORAIRE ?

Co-organisé par Kelp Forest Foundation
et l'Institut océanographique, Fondation Albert 1^{er}, Prince de Monaco.
*Co-organized by the Kelp Forest Foundation
and the Oceanographic Institute, Prince Albert I of Monaco Foundation.*

JEUDI 23 MARS 2023 - 9H00 A 12H00
MUSÉE OcéANOGRAPHIQUE DE MONACO

THURSDAY MARCH 23rd, 2023
MONACO OCEANOGRAPHIC MUSEUM

l'évènement se déroule en anglais, Event in English

Entrée libre, sur inscription, s'enregistrer ICI (avant le 21 mars) Free entrance,
please register [HERE](#) (before March 21st)

menaco ocean week

INSTITUT OcéANOGRAPHIQUE MONACO

KELP FOREST FOUNDATION

Oceanographic Museum of Monaco
9:00 - 12:00 | 23rd March 2023

SEAWEED: REALITY VS HYPE

Introduced by

prof. Tim Flannery
Climate Council

Robert Calcagno
CEO Oceanographic Institute,
Prince Albert I of Monaco Foundation

Moving from start-up to scale up: come find out from some of the players in the seaweed industry who have achieved phenomenal milestones and who graduated from being start-ups to being high growth companies. Featuring seaweed cultivators, kelp forest restorers, industry game changers, and cutting edge science:

Daniel Hooff
CEO & Founder
Kelp Blue

Kerstin Schmeiduch
Dir. Sustainability,
Nestlé Purina Petcare
Europe

Kat Bruce
CPO & Founder
NatureMetrics

Olavur Gregersen
CEO & Co-Founder
Ocean Rainforest

Samantha Deane
Managing Director
Kelp Forest Foundation

Philippe Potin
Research Director
CNRS Roscoff

Brian Tsuyoshi Takeda
CEO & Founder
Urchinomics

Rodrigo Garcia Gonzalez
Co-CEO & Co-Founder
Notpla

Vincent Doumeizel
Senior Advisor
UN Global Compact

Adrien Vincent
Albatros Advisory

Oceanographic Museum, Avenue Saint-Martin, 98000 Monaco

Contact: **Samantha Deane**
T: +31 6 2347 5431
E: info@kelpforestfoundation.org

register at: <http://bitly.ws/B3aR>

MONACO OCEAN WEEK

MONACO (Cont.)



Daniel Hooft



Samantha Deane



Prof Tim Flannery



Vincent Doumeizel



Olavur Gregersen



Dr Philippe Potin




Adrien Vincent



Kerstin Schmeiduch

AWARENESS FALKLANDS FILM

Our 2-minute film on the eDNA Falklands study "premiered" at Monaco Ocean Week. It was filmed by the talented Oly Dempster of Falkland Islands Film Company. The stunning video showcases both the project and the remarkable kelp forest environment in the Falkland Islands and explains the use of eDNA as a powerful tool to create a biodiversity footprint and track changes without disturbing the animals or the ecosystem.



The screenshot shows a Vimeo video player interface. At the top, there are navigation links: "vimeo", "Manage Videos", "Resources", "Features", "Watch", and "Upgrade". A search bar on the right contains the text "Search videos, people, and more". The video player itself shows a seal swimming in a kelp forest. The video progress bar is at the bottom, showing a play button, a progress line, and a timestamp of 01:42. To the right of the video player, there is a green button labeled "Hire" and a link "Looking for more video pros? Post a j".

Falkland Kelp eDNA project launch in Monaco for Ocean Week - March 23rd 2023

✓ Oly Dempster is available
Hire
Looking for more video pros? [Post a j](#)

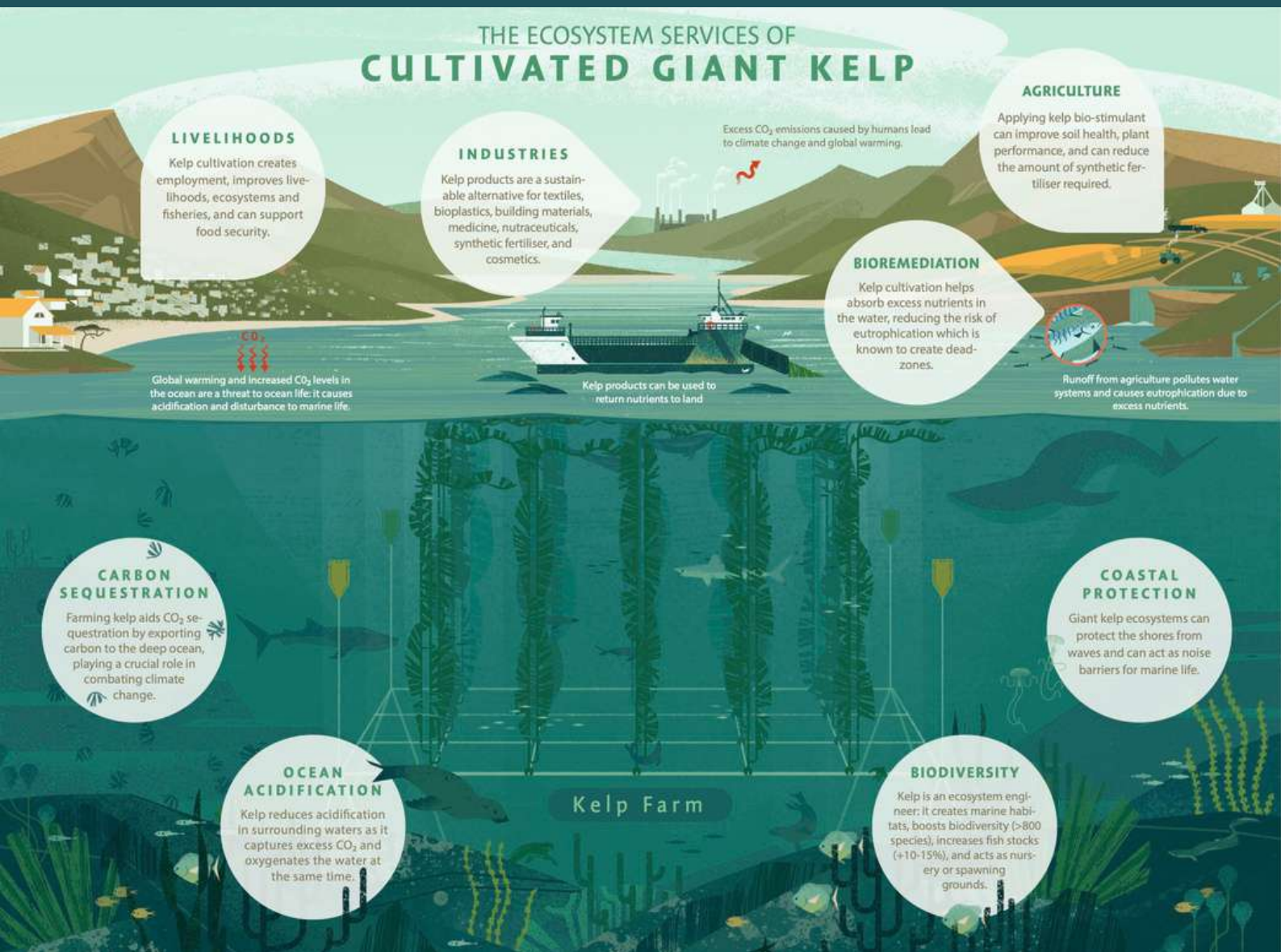
LINK TO VIDEO: <https://vimeo.com/810621685>



Falkland Islands Film Company

AWARENESS INFOGRAPHIC

Kourtney Jossy, a talented intern, created an infographic to illustrate some of the ecosystem services (the benefits provided to us by nature) of cultivated giant kelp. The infographic was presented at Monaco Ocean Week to illustrate our focus areas aimed at quantifying these services with transparent and independent research.



AWARENESS HIGH SCHOOL PRESENTATION

Samantha presented to a group of teenagers from Junipero Serra High School, all the way in San Mateo, California. It was part of their **Creative Solutions for the Global Good** course in which they invite "creative and inspiring guest speakers from all over the world to "Zoom" into classes to share their experiences about projects and companies that they have started and present diverse perspectives." Samantha presented about cultivated kelp forests as a solution to climate change and biodiversity loss.



CREATIVE SOLUTIONS
FOR THE GLOBAL GOOD

PRESENTATION
26-1-2023



A CATHOLIC COLLEGE PREPARATORY



AWARENESS RADIO HOBART



Whilst attending ISS Conference in Hobart, Samantha was asked by **ABC Radio Hobart** to join their Breakfast Show. She was interviewed by **Ryk Goddard**, who wakes up with Hobart every morning as breakfast presenter for 936 ABC Hobart. Samantha told early morning commuters about the role of our foundation in unlocking the power of kelp and her hopes and interests in the symposium.



Samantha with Ryk Goddard



OTHER NEWS

NEW SCIENTIFIC ADVISOR

FINN ROSS

NEW
SCIENTIFIC
ADVISOR



FINN ROSS

Finn is Deakin University PhD candidate, investigating seaweed as a natural climate solution. He is also the co-founder of the charity Let Them Fish, a self described 'Eco Interpreter' and contributor to Live Ocean. Finn is also founder of Carbonz, Bomb Bucha and Future Farmers New Zealand. Finn lives on Lake Hawea Station; his family farm which is pioneering on farm environmentalism and is the first certified carbon zero farm in Australasia. Finn is passionate about nature connection, climate solutions and building an inclusive and ecologically sound society

<https://kelpforestfoundation.org/>



We are delighted to add Finn Ross as the youngest member of our advisory team. Finn's research experience will help us quantify the contribution that large-scale seaweed cultivation has as a means for ocean carbon drawdown, bioremediation and to boost biodiversity.

Finn: "As a young scientist passionate about the climate crisis it is exciting to be working in the seaweed sector which holds so much future promise for climate change mitigation. I am thrilled to be working with Kelp Forest Foundation on their journey to support critical seaweed science that will enable climate action."

NEW SCIENTIFIC ADVISOR

DR. IAN HENDY

NEW SCIENTIFIC ADVISOR

DR. IAN HENDY

Dr. Ian Hendy is a marine conservation ecologist with a doctorate from University of Portsmouth. He is an expert in plant-animal interactions, animal behaviour and physiology, and decay pathways of large woody detritus.

His his interests are focused upon the essential role of ecosystem engineers, the factors that influence biodiversity, the recycling of carbon in coastal ecosystems and the enhancement of, and conservation of marine fisheries and MPAs.

Dr Hendy will provide us with scientific and technical guidance, expertise and oversight in all our biodiversity-related research projects.

<https://kelpforestfoundation.org/>

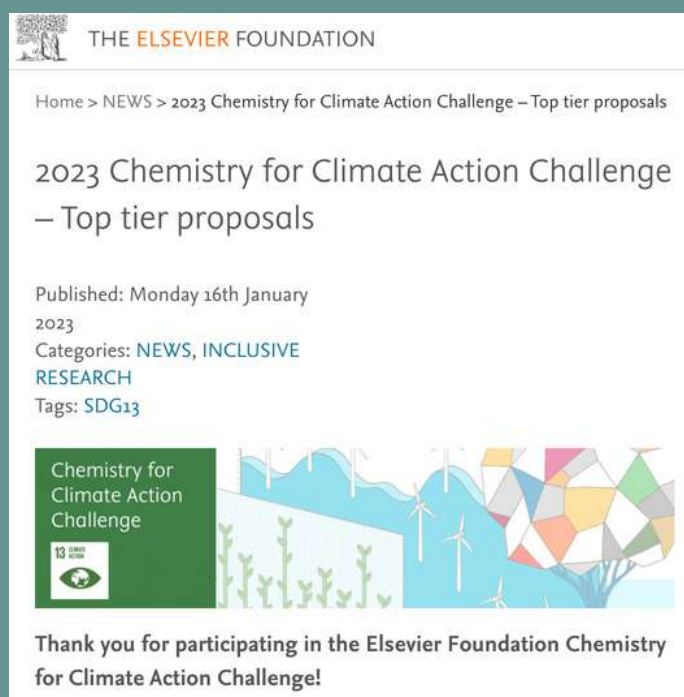


Dr. Ian Hendy is a Senior Lecturer and Researcher in Coastal Ecosystems at the University of Portsmouth, who has long had the view that coastal and near-shore marine vegetated ecosystems, such as kelp forests, are essential for life on Earth. He he is a strong proponent of their significant contribution to protecting the oceans and marine life. He contributed to the award-winning film "Help Our Kelp" featuring beautiful underwater footage and narrated by Sir David Attenborough. The seven-minute film was seen by millions and was aimed at protecting the kelp forests on the South coast of England.

Dr Hendy is well aware of KFF's work since he co-co supervises Angelique Dodds, one of our MSc scholars who is creating the algal baseline study.

OTHER NEWS AWARDS

Our research project with Wageningen University and Purina Nestlé to investigate the impact of giant kelp biostimulants on crop resilience on abiotic stress was selected by The Elsevier Foundation as one of the **top global research proposals in their *Chemistry for Climate Action Challenge***.




THE ELSEVIER FOUNDATION

Home > NEWS > 2023 Chemistry for Climate Action Challenge – Top tier proposals

2023 Chemistry for Climate Action Challenge – Top tier proposals

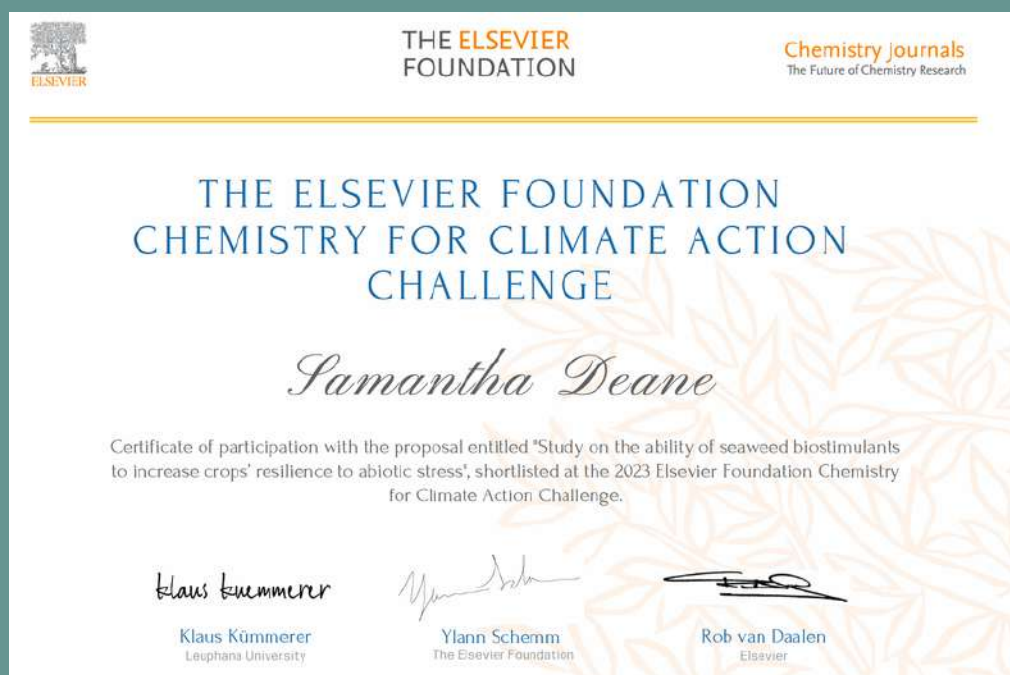
Published: Monday 16th January 2023
Categories: NEWS, INCLUSIVE RESEARCH
Tags: SDG13



Thank you for participating in the Elsevier Foundation Chemistry for Climate Action Challenge!

- **Samantha Deane**, Finding sustainable solutions for the agricultural industry to maintain crop yields while adapting to climate change. This study will research the effects of seaweed biostimulants on crops, focusing on their ability to increase crop resilience against abiotic stress including their impact on the plant's ability to uptake and retain water.

<https://elsevierfoundation.org/2023-chemistry-for-climate-action-challenge-top-tier-proposals/>



THE ELSEVIER FOUNDATION

Chemistry journals
The Future of Chemistry Research

THE ELSEVIER FOUNDATION CHEMISTRY FOR CLIMATE ACTION CHALLENGE

Samantha Deane

Certificate of participation with the proposal entitled "Study on the ability of seaweed biostimulants to increase crops' resilience to abiotic stress", shortlisted at the 2023 Elsevier Foundation Chemistry for Climate Action Challenge.

Klaus Kümmerer
Klaus Kümmerer
Leuphana University

Ylann Schemm
Ylann Schemm
The Elsevier Foundation

Rob van Daalen
Rob van Daalen
Elsevier

OTHER NEWS AWARDS



Ocean Born Foundation
1,347 followers
12h · Edited ·

Just as the ocean's waves, women are powerful, unstoppable, constantly in motion and moving forward. Across the globe, women are at the forefront of the fight for ocean conservation. They are our marine scientists, our oceanographers, our grassroots activists, our policy makers, our mangrove restorers, our seaweed growers... women are leading the charge to protect our ocean and the diverse species that call it home.

Their hard work and dedication have made it more likely that international treaties are ratified, that we increase awareness, harness technology and translate into tangible, scalable solutions that will put the ocean back on a path to recovery. Women are not just advocating for change, they are bringing it about and these women-led entities that we are honoured to collaborate with are proof of that: [SeaLegacy](#) [Ocean Culture Life Make Waves Ltd](#) [Kelp Forest Foundation](#) [Clean Arctic Alliance](#) [Oceana Gravity Wave S.L](#) [Wave Women in Ocean Science](#) and [Loowatt Ltd](#).

As we celebrate [#InternationalWomensDay](#), we honour these women, our own unstoppable women on the Ocean Born team, and all the countless women tirelessly fighting to [#protectwhatyoulove](#).

[Cristina "Mitty" Mittermeier](#) [Mission Blue](#) / [Sylvia Earle Alliance](#) [Virginia Gardiner](#) [Sarah Macdonald](#) [Sian Kevill](#) [Pascale Moehrle](#) [Samantha Rengers](#) - [Deane Tamsin](#) [Raine Amaia Rodriguez](#) [Sola Madeline](#) [St Clair](#) [Monica Zaldumbide](#) [Alcocer](#) [Angela Segimon](#) [Manzanos](#) [Melanie Mercer](#) [Leanne Ware](#) [Katinka Donagemma](#) [Silvia Matesanz](#) [Signe Marcher](#) [Meg Thode](#) [Marta de Juan González](#) [Fabiana Piera](#) [Dominique Lesser](#) [De Heeckeren](#) [Michelle Cherubin](#) [Mireia Valls](#) [Lagunas](#) [Laura Contreras](#)

Samantha was highlighted by the Ocean Born Foundation as one of the global "women making waves". She was honoured to be considered alongside her ocean hero, Dr. Sylvia Earle, a pioneer oceanographer and explorer.



OTHER NEWS

AWARDS

Samantha was selected by as a semi-finalist for the **Global Talent Award** for the SDG14, Life under Water. The award is organized by *Global Talent Week* and the winner is an "outstanding talent who offers the best solution/initiative towards their chosen SDGs". All successful applicants had a platform to present their idea to a jury panel of experts, investors, professors, and entrepreneurs. The purpose of the award is to "inspire talents around the world to use their time and creative energy to achieve the sustainable development goals".

GLOBAL TALENT WEEK™
MARCH 21ST-23RD

SDG 11, 12, 14 SEMI-FINAL
MEET THE SEMI-FINALISTS

THURSDAY 9TH MARCH
(15:00-17:00 CET)

Oslo kulturfolk Natural State myC

11 Sustainable Cities and Communities
12 Responsible Consumption and Production
14 Life Below Water

Transparently establishing the value of giant kelp forests as a powerful solution to restore ocean health, mitigate climate change and increase marine biodiversity.

Samantha Deane
MD & Co-Founder
Kelp Forest Foundation

Achieving breakthrough momentum by deploying the first clean container ship to cross an ocean, with hydrogen fuel cells combined with wind for increased speed and range.

Danielle Southcott
Founder & CEO
Veer.Voyage

Making the regeneration of nature profitable, aiming to pioneer the first ever seaweed farms specifically designed to sequester carbon credits, along with other benefits.

Khory Hancock
General Manager
Climate Revive

Wavepiston harvests the energy in the waves to produce clean, affordable electricity and desalinated seawater.

Emiel Johannes Schut
CCO
Wavepiston

Harvesting ecologically destructive sea urchins from the marine deserts, re-home them & feed them a naturally derived feed, and turn them into premium sea urchin roe

Brian Tsuyoshi Takeda
Founder & CEO
Urchinomics

Developed a unique, highly efficient and modular technology to convert ocean energy into renewable electricity, fresh drinkable water and clean water for power-to-x.

Hanna Jakob
Project Manager
Exowave

Harvesting invasive saragassum threatening the Caribbean region. Turning the seaweed into numerous environmentally friendly products, with autonomous harvesting drones.

Paulina Zanela
COO
Thalasso AS

Seaweed products as a solution for areas such as food security, nutrition, climate change mitigation, single-use plastic alternatives, sustainable feeds and medicines

Dr. Angela Mead
Founder & MD
Biome Algae

Novel biomaterials to replace single use plastics in various verticals. Materials derived from naturally occurring seaweed biopolymers from red seaweed strains.

Carlo Fedeli
CEO & Founder
FlexSea

OTHER NEWS

FREEZER FINALLY ARRIVED

The -80 degrees freezer has finally arrived in the lab in Luderitz after a 7-month wait. The freezer is key to preserve the sediment samples that will be collected for our blue carbon and benthic impact studies.

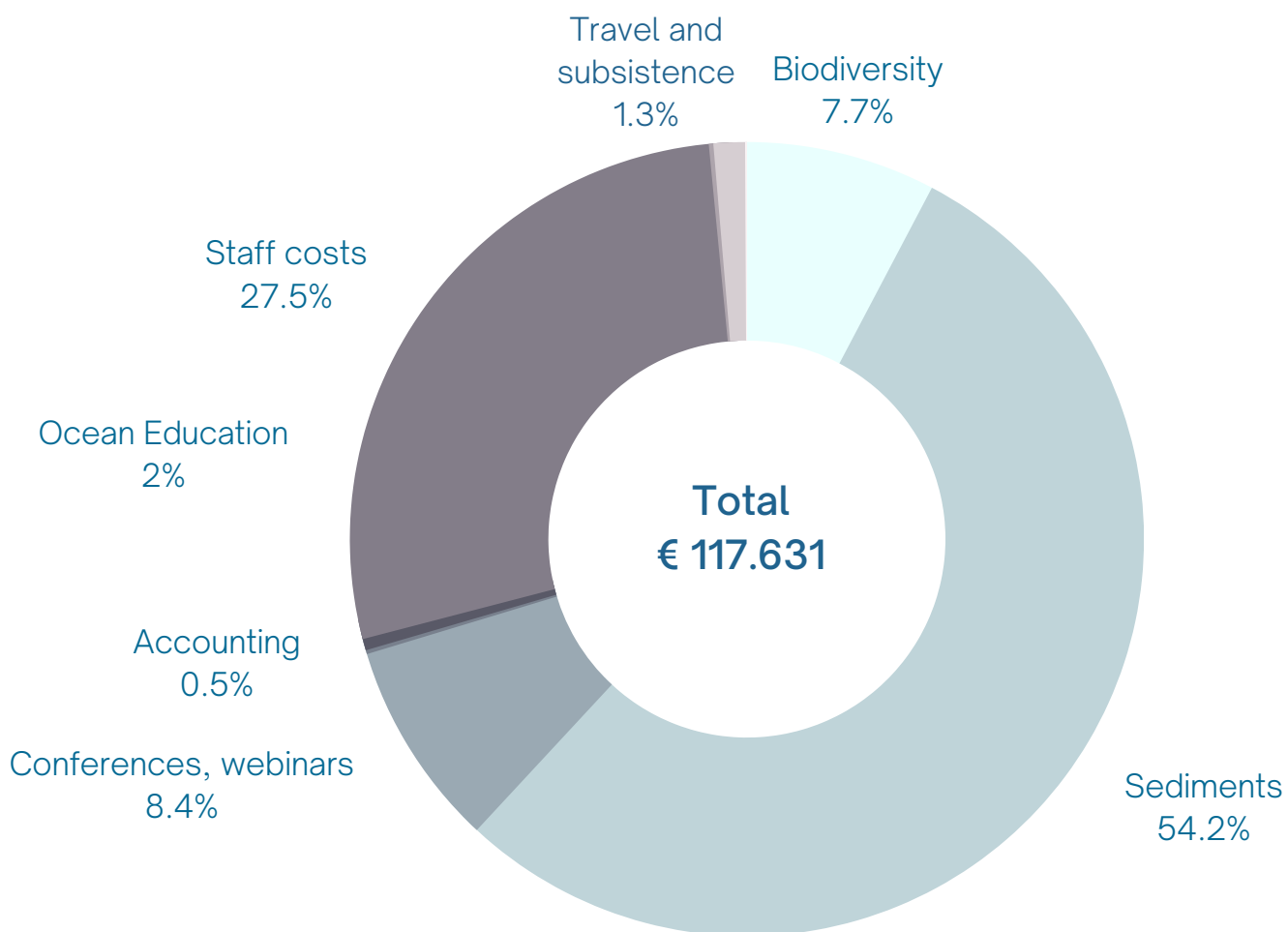
Sediment samples are typically preserved either by freezing or by immersion in a preservative solution. When cold storage is used, sediment samples are either frozen immediately after collection or transported on ice and then frozen in the laboratory. Samples need to be stored at either -20 °C or -80 °C depending on the availability of equipment and the analysis targets. Deep freezing at -80 °C is often used when bacteria and archaea are targeted and it is required when eDNA is to be analysed or for long-time storage. So this is a key piece of equipment for our researchers.





FINANCIALS

Q1 EXPENSES





KELP FOREST
FOUNDATION