



Water Warriors

Poseidon Pellets to absorb phosphorous on contact

Lexington, KY, USA

waterwarriorsinc.com

[linkedin.com/company/waterwarriors](https://www.linkedin.com/company/waterwarriors)

@Water_Warriors



Problem

Nutrient pollution is one of our most challenging environmental problems, resulting in compromised water from our smallest stream to our coastlines. It's a menace, impacting human health, and causing millions of dollars in damage.

Solution

Poseidon pellets were made to adsorb phosphorus on contact. so issues like algae blooms and loss of marine life never happen. Water flows through our pellets and phosphorus stays behind. We return the nutrients to the land as a fertilizer.

Business Model

Target Customers

Agricultural runoff, Stormwater, Industrial Wastewater, Municipal Wastewater, Septic, Aquaculture.

Channels

Global Distribution Agreement (ChannelSales) Directsales(B2B)

Potential Revenue Streams

Subscription Revenue Model. Direct Sales. Channel Sales (Indirect Sales).

Ocean Impact

High levels of phosphorus from ag runoff and urban environments cause algae to grow at a remarkable rate, which harms water quality and natural habitats, turning an important water source into an algae-choked dead pool -- a process called eutrophication.

At Water Warriors, we took our passion for clean water and renewable resources and developed Poseidon pellets to adsorb phosphorus. To get it out of the water, resulting in resilient bodies of water and healthy marine life and coastlines.

Solution Roadmap

TRL Level - 9

Immediate Next Steps in Development

We are extending our CRADA agreement with the US EPA for three years to develop more adsorption for Nitrogen and Ammonia removal. We solely focus on nutrient removal.

Three Greatest Needs in Next 12 Months

Water Warriors greatest needs in the next 12 months are 1. Scale up to meet demand. 2. Hire and fill 4 positions. 3. Oversee foreign installations in-person to strengthen our global distribution agreement.

Industry Information

Our target customers/markets are often located in regions where nutrient pollution is understood to be an environmental problem and where regulations exist to manage the issue.

Removing harmful phosphorous created by water use in agriculture, industry, and urban environments is an expensive proposition. Worse, the problem is pushed downstream, creating more issues for our rivers, lakes, and oceans.

Technology & IP

The Poseidon Pellets Patent is a part of Water Warriors Intellectual Property through a Cooperative Research and Development Agreement with the EPA.

The following tests have been conducted and passed:

- The Department of Natural Resources Wisconsin has conducted toxicology testing.
- The US EPA has conducted leech testing.

Team

John Gradek
CEO

Steve Chamberland
CRO

Dr. Mallikarjuna Nadagouda
Lead Scientist

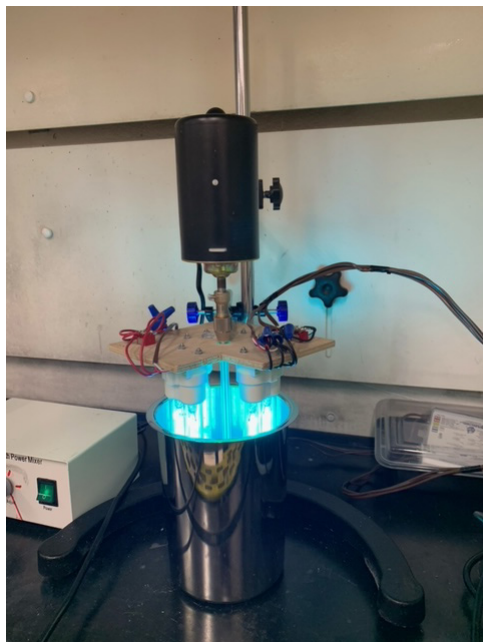




Aqualumos

Photocatalytic Forever Chemical Destruction System

CT, USA
www.aqualumos.com
linkedin.com/company/aqualumos



Problem

Forever chemicals a.k.a. per- and poly-fluoroalkyl substances (PFAS), are a class of pollutants now found everywhere in water. PFAS are linked to a wide array of negative health impacts including immune system disruption and certain cancers.

Solution

We are developing specialized industrial-scale systems that use light and a catalyst (photocatalysis) to break down PFAS. We have successfully demonstrated breakdown into non-toxic compounds to clean our drinking water and environment.

Business Model

Target Customers

End-users of our tech will include water treatment plants processing over 1M gallons/day.

Channels

Manufacturing licensees of our technology will include Evoqua, Xylem, and Veolia.

Potential Revenue Streams

Technology licensing agreements with channel partners capturing ~35% of their revenues.

Ocean Impact

Due to the persistent nature and subsequent widespread surface water contamination of PFAS, they also exist in the ocean. PFAS already exist in large enough quantities that recent literature found that all rain on earth exceeds safe limits for drinking, likely from oceanic wave action aerosolizing PFAS.

By targeting large water treatment plants, we can prevent PFAS, which cause everything from high cholesterol to cancer, from making it to the ocean where they can cause irrevocable harm.

Solution Roadmap

TRL Level - 6

Immediate Next Steps in Development

Immediate next steps include raising money for the fabrication and testing of an initial pilot system in the field and testing of advanced designs.

Three Greatest Needs in Next 12 Months

1) Funding for pilot system fabrication and testing, and supporting founders. 2) Additional talent: Investor/Advisors and Engineering specialists. 3) Additional source waters to test a wider array of real-world water chemistries.

Industry Information

PFAS are now the #1 concern for members of the American Water Works Association. With national drinking water regulations expected 2023, CapEx for PFAS systems, already growing quickly is expected to take off soon after.

There are two main categories of approaches:

- non-destructive filtration technologies such as granular activated carbon, membrane, or resin filtration
- destructive technologies being developed like our own

Technology & IP

- The technology has demonstrated proof of concept and is able to destroy PFAS using light and a micro-particle catalyst.
- We have a patent pending that has been published and allowed. We are filing several continuations to further fortify the moat with our initial priority date. We expect an issuance within the next two months.

Team

Niko Franceschi-Hofmann
Founder & CEO

John Grasso
Co-Founder & CTO





HonuWorx

Uncrewed Robotic Systems for Scalable Subsea Work

Inverurie, Scotland, UK.

honu-x.com

linkedin.com/company/honuworx



Problem

The world needs to work subsea. Diver approaches are not scalable because of depth, payload, duration, entanglement, and safety issues. Deploying ROVs from crewed ships comes with enormous costs and comes with an immense carbon footprint.

Solution

Loggerhead is a robotic system composed of a large UUV mothership and an ROV with edge-cloud communications and control software that connect distributed human stakeholders to the operation. The software is itself a product.

Business Model

Target Customers

There are three target markets:

- offshore energy
- defense
- subsea restoration

Channels

We sell directly to the offshore energy sector and subcontract to primes in the defense sector.

Potential Revenue Streams

We offer our software products as SaaS and anticipate

Ocean Impact

There are a host of innovations to help understand and restore the oceans such as robots to harvest invasive species, artificial reef building and kelp transplanting. These are impossible to sustainably scale because they require costly and dirty crewed vessels and/or human divers for a restoration campaign.

Uncrewed robotic systems developed by HonuWorx, which are all-electric represent the ONLY cost-effective and scalable approach for delivering ocean restoration solutions.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

We are extending the cloud-edge platform for rapid ROV integrations with control systems and building/testing autonomous Loggerhead functionality in simulation.

Three Greatest Needs in Next 12 Months

HonuWorx has won several grants in 2022 to perform preliminary design and system risk reduction tasks. We need to execute on these projects and close a sizable seed round of investment to build an industrial demonstrator.

Industry Information

HonuWorx was founded with a vision to create cost effective and scalable subsea restoration solutions that would enable a relatively new sector in the marine industry: subsea restoration.

We currently deliver solutions to offshore energy to support progressive decarbonization of offshore operations.

The offshore energy and defense industries have the burning challenges and financial resources to fund technology projects that help to accelerate the HonuWorx technology and capability roadmaps.

Technology & IP

Our Loggerhead product concept is covered by an awarded US patent.

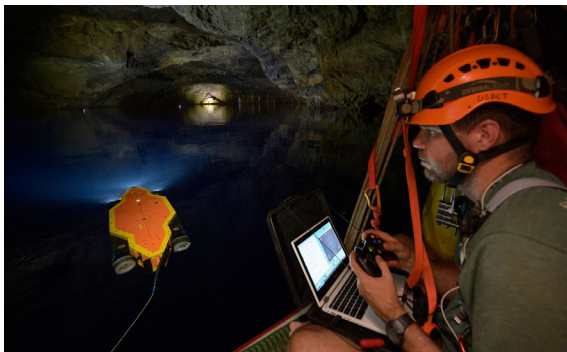
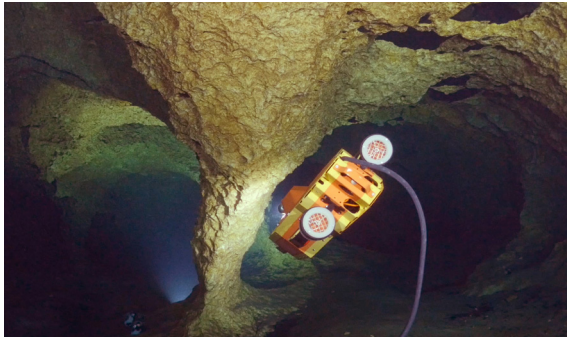
The edge-cloud communications and control software — the actual code — is copyrighted intellectual property, and is considered a trade secret in our employment agreements. Its unauthorized use is considered illegal.

Team

Lee Wilson
Co-Founder & CEO

Lucas Wissmann
Co-Founder





Problem

Monitoring of underwater confined and subterranean critical environments is being abandoned due to the significant access costs and life-threatening hazards. Exploration is deemed impossible and inspections cost prohibitive.

Solution

Sunfish will autonomously map and inspect in service difficult-to-access, complex underwater infrastructure so that owners, operators and regulators can plan, assess and mitigate issues at the lowest life-cycle cost.

Business Model

Target Customers

- Merchant Naval Ship Owners
- Municipalities & Gov
- Science Institutions
- Energy Companies

Channels

Our sales operate via direct channels in trade shows, conferences, social media and our website.

Potential Revenue Streams

- Robot as a Service
- Data Subscription and Engineering Services

Ocean Impact

Sunfish offers a scientific ocean research platform to determine mesophotic coral ecosystems, geological features such as sea caves associated with historical sea-level changes, and the documentation of important maritime archaeology sites.

Ocean health is negatively impacted when ballast tank organisms during intake at the departure port are later discharged at the destination port. Sunfish offers invasive organism monitoring before discharge so that ship operators can remediate ocean impact.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

Sunfish is evaluating integration of tank inspection sensors for demonstrations. Sunfish is also developing untethered autonomous navigation, camera and sonar post-processing and increased endurance.

Three Greatest Needs in Next 12 Months

1) Capital for a water distribution main inspection prototype robot 2) Grants for a resident SUNFISH ocean exploration and science robot at pilot site 3) Chief Commercial Officer to focus on commercialization

Industry Information

Sunfish is situated in four industries:

1. maritime repair and maintenance,
2. water line repair and maintenance,
3. ocean research and
4. defense.

Barriers for entry into these markets are high due to the necessary technology required for successful robotic operations underwater.

Technology & IP

Sunfish has a universal permanent exclusive royalty free license for Intellectual Property related to autonomous underwater vehicle inspections, intervention and exploration applications.

Sunfish also is involved in Small Business Innovation Research of which it holds a 20 year data right protection for technology developed in collaboration with the government.

Team

Alberto Lopez
CEO

Kristof Richmond
CTO

William Stone
Chairman of the Board





NovFeed

Biotechnology Platform That Transform Organic Waste into Protein-Rich Feed Ingredients

Dar es Salaam, Tanzania

novfeed.com

linkedin.com/company/novfeed

@ Novfeed

Problem

Yearly, over 20 million tons of wild fish are caught and processed into feed for the fastest growing part of the world food system aquaculture. Since 2000, there's been a 5-fold increase in prices of protein ingredients rendered from wild fish.

Business Model

Target Customers

NovFeed targets animal feed millers who buy in bulk and use it to produce complete fish feed.

Channels

NovFeed is B2B, we sell protein to aqua-feed millers for \$1000/ton, with a profit margin of 35%.

Potential Revenue Streams

- Sales of single cell protein
- Consultations
- Licensing NovFeed technology (Future plan)

Ocean Impact

NovFeed is focusing on replacement of fish meal in aqua-feed formulation. For every single ton of waste recycled, 7.6 tons of carbon emission is reduced.

In standard feed, every ton of fishmeal requires 3 tons of wild-caught fish, such as anchovies and sardines.

As a result, for every ton of single-cell protein (NoveX) substituted for fishmeal (FM), roughly 3 tons of wild-caught Sardinia will remain in the ocean, improving the forage-fish population.

Solution

NovFeed offer a protein feed for aquaculture made from renewable raw materials through precision fermentation-based ingredients and proprietary bio factories. it offers a sustainable high-protein alternative to fish meal. The product contains 70% crude protein and a balanced amino acid profile.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

Our next big milestone is to scale to our production to at least 500kg per week to address early adopter specialty markets. Our other milestone is developing our synthetic biology platform.

Three Greatest Needs in Next 12 Months

NovFeed plans for 12-18 month is to develop pilot facility to scale production. Moreover, the company will be heavily focused on fundraising, as NovFeed has already identified trialling capacity while working out the way.

Industry Information

Commercial and smallholder aquaculture enterprises are growing, thereby increasing the demand for fish feed. Soy bean and fishmeal have traditionally been the main protein sources in fish feeds, but with the growth of aquaculture sector and the world's population, they are failing to meet the increasing demand.

The global aquafeed market size reached US\$ 140.8 Billion in 2021. Looking forward, IMARC Group expects the market to reach US\$ 237.5 Billion by 2027, exhibiting a growth rate (CAGR) of 8.95% during 2022-2027.

Technology & IP

The company has filled core IP and is preparing to deploy pilot scale systems in the near future.

The IP include:

- the consortia of bacteria and
- bacteria storage technology.

Team

Diana Orembe
Founder & CEO

Otaigo Elisha
Founder & COO

Stephano Karoza
Aquaculture Scientist





Atlantic Sea Farms

Proving That Regenerative Seaweed Aquaculture Is A Viable Climate Change Mitigation and Adaptation Strategy

Biddeford, Maine, USA

[@atlanticseafarms](https://www.linkedin.com/company/atlantic-sea-farms)

[linkedin.com/company/atlantic-sea-farms](https://www.linkedin.com/company/atlantic-sea-farms)

Problem

1. The Gulf of Maine is warming faster than 98% of oceans worldwide, already effecting wild fisheries.
2. 98% of seaweed eaten in the US is grown overseas, often in compromised waters with questionable labor practices

Business Model

Target Customers

Millennial and Gen Z grocery shoppers who consider health and climate impact in their food choices.

Channels

Retail Grocery, Ingredient, Food Service, New Market Development

Potential Revenue Streams

Delivery of goods in Retail Grocery, Ingredient, Food Service, New Market Development

Ocean Impact

Atlantic Sea Farms (ASF) is proving that regenerative aquaculture is a viable tool for coastal communities to adapt to climate change while mitigating its effects and restoring ocean health.

ASF is helping to demonstrate that kelp aquaculture provides valuable ecosystem services—improving biodiversity and mitigating effects of ocean acidification, and capturing carbon, all while introducing a nutrient dense and delicious carbon-negative, zero-input, domestic food source to the supply chain.

Solution

By investing in innovation and product development, we can increase access to nutrient dense, regeneratively grown domestic kelp, proving that we can viably scale regenerative sea farming and protect coastal economies and ecosystems.

Solution Roadmap

TRL Level - 4

Immediate Next Steps in Development

Identify product opportunities specific to ASF, Engage product developers to create 3 kelp-forward SKUS, Test/adjust products for commercialization, Implement go-to market strategy

Three Greatest Needs in Next 12 Months

1) Receive funding and create 3-5 innovative new products, 2) Determine cost-effective production strategy, 3) Create and activate strong sales, marketing, and go-to-market strategy

Industry Information

Commercial seaweed is valued at \$16.6 billion globally, and 98% of the seaweed consumed in the US is imported. ASF represents 85% of the cultivated seaweed in the US and is creating growth opportunity throughout grocery.

We are currently succeeding nationwide in natural grocery with five CPG products, soon to be seven. Our velocity is strong in every category we operate in, and we've garnered accolades from natural food and beverage awards such as the NEXTY and Good Food Awards, in addition to the Specialty Food Association soft Award.

Technology & IP

- ASF uses proprietary processes for seed cultivation, farming, as well as processing kelp to an RTE form.
- ASF's formulas and recipes are proprietary to the business

Team

Briana Warner
President & CEO

Jesse Baines
Chief Marketing Officer

Peter Rahn
Dir. Quality & Food Innovation





Kintra Fibers

A New Polyester

Bio-based, Biodegradable, Infinitely Recyclable

Brooklyn, New York, USA

kintrafibers.com

[linkedin.com/company/kintrafibers](https://www.linkedin.com/company/kintrafibers)

[@kintrafibers](https://www.instagram.com/kintrafibers)



Problem

Traditional PET polyester is fossil fuel-based, is responsible for fibrous microplastic pollution in the ocean, and results in toxic textile waste in landfills. No sustainable alternative delivers performance and price parity.

Solution

We have developed a new polyester that is: 1) Bio-based, 2) Biodegradable, and 3) Compatible with standard manufacturing equipment. Kintra reduces emissions by 95%, and addresses microfiber pollution and textile waste. All while delivering performance and price parity.

Business Model

Target Customers

We work directly with the leading environmentally-minded apparel brands and mills.

Channels

We sell yarn to apparel brands and mills. In the future we can work with fabric distributors. We can also integrate further upstream, selling our resin and licensing the spinning of our fibers to yarn manufacturers.

Potential Revenue Streams

- Yarn sales
- Resin sales/licensing
- Fabric sales via distributors

Ocean Impact

Washing clothes made from PET polyester pollutes the oceans with fibrous microplastics at the volume equivalent to 50 billion plastic bottles, every year. A single load of laundry can shed millions of microfibers. PET polyester fibers do not break down in aerobic conditions, such as wastewater treatment facilities.

To solve microfiber pollution at the source, we have designed our Kintra polyester with an inherently compostable molecular structure that can safely biodegrade within aerobic conditions of wastewater treatment facilities.

Solution Roadmap

TRL Level - 5

Immediate Next Steps in Development

Next month, we are kicking off a consortium pilot project to scale production with five of the world's biggest brands, facilitated by the industry-leading group Fashion For Good. Participating brands will be publicly announced mid-November.

Three Greatest Needs in Next 12 Months

1) Expand our manufacturing partner network for production of resin, yarns, and fabrics to service customer demand, 2) hire a team to support scale-up operations, and 3) continue our ongoing environmental studies with 3rd party research groups.

Industry Information

The total polyester market is a \$160 billion opportunity that is ripe for disruption. No sustainable alternative has been able to reach the performance and price parity to traditional PET polyester, which is necessary for market adoption.

Within the polyester market, we see the \$24 billion rPET (recycled polyester) segment as our serviceable market that we are uniquely positioned to capture, as brands that buy rPET are seeking sustainable options.

Technology & IP

Our proprietary polyester is a polybutylene succinate (PBS) nanocomposite, which we have engineered for enhanced strength and processability in the fiber and textile category.

We have a patent in process for the composition of matter and method of making our polymer. We own all of the IP for our materials.

Team

Billy McCall
Co-Founder & CEO

Alissa Baier-Lentz
Co-Founder & COO

Dr. Rebecca Ruckdashel
Fiber Extrusion Scientist





Sway

Seaweed-Based, Compostable Replacements for Plastic Packaging

Oakland, CA, USA
swaythefuture.com
linkedin.com/company/swaythefuture
[@swaythefuture](https://twitter.com/swaythefuture)



Problem

~8 million tons of plastic waste escape into the oceans each year, 40% of which is thin-film packaging. These bags and wrappers are not recyclable and eventually degrade into microplastics. As demand continues to grow, we need solutions.

Business Model

Target Customers

Brands using bags, mailers, pouches, and food packaging and advanced compostable film applications.

Channels

B2B, co-development with packaging manufacturers and design venture studios and R&D applications.

Potential Revenue Streams

R&D, design, and sales of thin film packaging biomaterials.

Ocean Impact

- Supports regenerative seaweed aquaculture, which can store carbon, combat ocean acidification, and provide habitat for biodiverse life.
- Creates employment opportunities for coastal communities, whose reliance on fishing is threatened by climate change.
- Reduces reliance on petroleum and eliminates plastic waste, offering a home-compostable alternative to 'forever plastics' that are a major source of ocean pollution.

Solution Roadmap

TRL Level - 4

Immediate Next Steps in Development

Optimize performance in preparation for commercial launch; Scale production capacity to serve commercial needs by the end of 2022; Close next funding round in May 2023; Expand headcount by 15-20 persons

Three Greatest Needs in Next 12 Months

Solidifying large purchasing agreements with mission-aligned suppliers; Expanding robust ecosystem of manufacturing partners to increase scale of production; Decreasing costs through economies of scale

Industry Information

Packaging constitutes more than 40% of total plastic production. BP reports that plastic packaging is projected to represent 95% of growth in demand for petroleum over the next 20 years.

Packaging is ingrained in our daily lives, and the demand for flexible plastics continues to grow with the rise in e-commerce business. Sway offers compostable films that can scale at cost while meeting necessary performance.

Technology & IP

Sway has:

- a pending patent for our proprietary seaweed-based packaging tech, along with
- a library of trade secrets related to optimizing seaweed formulations and manufacturing.

Team

Julia Marsh
Co-Founder & CEO

Matt Mayes
Co-Founder & COO

Leland Maschmeyer
Co-Founder





Ebb Carbon

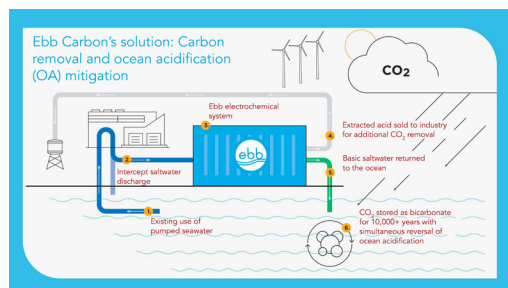
Removing Gigatons of CO₂ from the Air While Reversing Ocean Acidification

San Carlos, CA, USA

ebbcarbon.com

linkedin.com/company/ebbcarbon

[@ebbcarbon](https://twitter.com/ebbcarbon)



Problem

The ocean is both hero and victim of climate change—it is one of the largest carbon sinks on the planet but rising carbon emissions have changed the chemistry of seawater, making it more acidic.

Business Model

Target Customers

- Shellfish hatcheries who benefit from ocean acidification reversal;
- Carbon removal credits buyers

Channels

Business to business

Potential Revenue Streams

Ebb sells the benefits of ocean acidification reversal and carbon dioxide removal as services.

Ocean Impact

Ebb Carbon's solution uses electrochemistry to generate alkalinity (NaOH) from seawater, which raises the pH of local waters when returned to the ocean.

Reversing ocean acidification will directly benefit marine ecosystems, aquaculture facilities and fisheries, and especially shellfish hatcheries.

Removing carbon dioxide from the atmosphere will help address the root cause of ocean acidification.

Solution

Ebb Carbon taps into the ocean's natural processes to extract acid out of seawater, reversing the acidification of the oceans while pulling CO₂ out of the air.

Solution Roadmap

TRL Level - 6

Immediate Next Steps in Development

(1) Deployment of first system in the field; (2) Removal of first ton of CO₂; (3) Begin pilot with aquaculture partner; (4) Establish 2023 sites and deploy 1000t(CO₂)/y capacity in 2023

Three Greatest Needs in Next 12 Months

(1) 2023 Sites with permits; (2) Data demonstrating benefit to marine life of Ebb's solution; (3) Identifying outstanding new hires and partners

Industry Information

Ebb Carbon is selling carbon removal credits to the rapidly growing voluntary market and is exploring emerging markets for ocean acidification reversal. Demand has increased recently as buyers seek removals that are permanent and additional.

Ebb Carbon also sells ocean restoration and ocean acidification mitigation as a service to industries like aquaculture and fisheries. We intend to use the Neptune Award to establish a pilot project at a shellfish hatchery.

Technology & IP

Our patent applications allow us to:

1. Operate at high efficiency and minimize energy use;
2. Facilitate direct verification of the benefits (ocean acidification mitigation, ocean chemistry restoration, and carbon removal) provided by Ebb's process; and
3. Maximize benefit to marine life, minimizes environmental risk, and facilitates the approval of permits.

Team

Ben Tarbell
Co-founder & CEO

Matthew Eisaman
Co-founder & CTO

Todd Pelman
Co-founder & Chief Engineer

Dave Hegeman
Co-founder, VP Engineering





VESTA

Vesta

Harnessing the Power of the Oceans to Remove CO2 from the Atmosphere and Enhance Coastal Resilience

San Francisco, CA, USA

vesta.earth

linkedin.com/company/vestaearth

[@vesta_earth](https://twitter.com/vesta_earth)



Problem

Vesta is solving multiple problems that intersect due to climate change. Carbon dioxide must be removed – and fast – at up to 12-18Gt/yr. Oceans face warming and acidification. Communities need more sand to protect their coastlines.

Business Model

Target Customers

- Corporations
- Carbon offset marketplaces
- Consultants/traders of carbon offset portfolios

Channels

We currently pre-sell carbon credits in the 'voluntary' market, directly and through Patch.

Potential Revenue Streams

Coastal Carbon Capture will eventually be commercialized using the sale of carbon credits as a revenue source.

Ocean Impact

CCC reduces the negative impacts of climate change. Coastal Carbon Capture stands a chance to be one of the most scalable, permanent, and additional methods towards combating climate change and ocean acidification with permanent carbon removal. It could locally reduce ocean acidity, an issue threatening marine life.

CCC could also help alleviate sand shortage constraints faced by coastal nourishment projects, while providing a way to make shoreline protection climate-friendly and carbon-removing.

Solution

Vesta is developing Coastal Carbon Capture, an ocean-based climate solution for scalable carbon removal and reduction of ocean acidity. This nature-based process can also help to protect vulnerable coastal communities from sea level rise and erosion.

Solution Roadmap

TRL Level - 4

Immediate Next Steps in Development

Vesta is collecting data from our first pilot demonstrations to help further the field of Coastal Carbon Capture with data on measurement of carbon removal quantities and rate, and ecological safety.

Three Greatest Needs in Next 12 Months

Philanthropic funding to help support field and lab studies. Our next pilot deployments will collect important field data for our ecological safety and MRV research. Additional customers and partnerships.

Industry Information

Voluntary carbon markets (VCMs), projected to grow to a \$50 billion market by 2030, provide an important pathway to achieve climate targets including through carbon dioxide removal (CDR) credits.

As the planet's second largest carbon sink, oceans are a prime candidate for CDR solutions. There are several other startups in the Ocean Alkalinity Enhancement space, but Vesta is the first and only to deploy a field pilot.

Technology & IP

Vesta intends to publish scientific results from the field trials, but we also intend to protect certain aspects of the intellectual property derived from the trials and license in order to build a sustainable business and reach scaled impact.

We have filed a provisional patent based on our unique technique, blend, and technology.

Team

Tom Green
CEO & Co-Founder

Kelly Erhart
President & Co-Founder

Dr. Nathan Walworth
VP of Science Strategy
Co-Founder





Spira

Carbon Negative Dyes from Algae

Los Angeles, CA, USA

spirainc.com

linkedin.com/company/spira-inc

[@spirainc](https://twitter.com/spirainc)



Problem

Most artificial colorants used in food, cosmetics, and textiles are made from petroleum, whose refinement pollutes local environments, is highly toxic, and pollutes waterways, potentially causing cancer.

Solution

Spira's solution is to use colorful carbon-negative algae and work with a global network of aquaculture farms to create sustainable and safe pigments. These dyes are non-toxic and prevent harmful runoff from polluting local waterways.

Business Model

Target Customers

- Sensient and Naturex

Spira sells to mostly to small-scale manufacturers.

Channels

Currently the team does direct distribution we market via trade shows and micro-influencer marketing

Potential Revenue Streams

Our primary revenue models are direct ingredients sales through our website and algae R+D consulting

Ocean Impact

Spira directly replaces the use of petrochemical-based pigments that pollute ocean ecosystems during the food, cosmetic or textile dyeing process.

They partner with farmers in developing countries to build ocean-based resiliency around the world by increasing the demand for engineered algae-based materials in order to gradually restore our coastal environment.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

Spira is preparing for a \$15M Series A raise that will expand production to 5mT of stable blue algae pigment monthly, netting a total potential revenue of \$2.25m at the current sale price of \$450/kg

Three Greatest Needs in Next 12 Months

\$15M Series A Fundraise, Hiring Talent Post Fundraise, and Sales Support for Blue, Red, and Yellow Pigments

Industry Information

The total market for pigments in food, cosmetics and textiles is \$16B. The global market for blue colorants is \$2.8B, and the team is focused first on blue colorants for US food products, a \$280M winner-take-all market

Indirect technological competition comes from synthetic biology startups that produce biological pigments.

Direct competition comes from petrochemical-based dyes and plant-based alternatives.

Technology & IP

Spira has filed 7 provisional and 2 non-provisional patent applications that are under review by the USPTO. These patent filings cover the technology from novel cultivation of algae, capture and conversion of CO2 and conversion, genetic engineering of algae and cyanobacteria, extraction of valuable materials, and the application of those compounds for the food, cosmetic and textile sectors.

Team

Elliot Roth
CEO

Surjan Singh
COO

Dr. Pierre Wensel
CSO

Amanda Presgraves
CIO

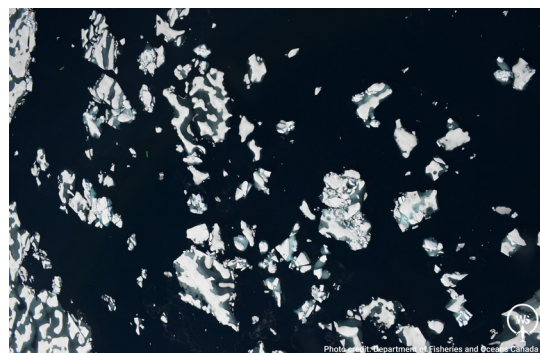




Whale Seeker

Marine Mammal Detection from Imagery Using Ethical AI

Montreal, Quebec, Canada
whaleseeker.com
linkedin.com/company/whaleseeker/
[@Whale_Seeker](https://twitter.com/Whale_Seeker)



Problem

Maritime industries are increasingly in conflict with whales. Reliable whale detection is needed for meeting sustainability goals, regulatory compliance, and understanding overall ocean health. Current methods are slow and unscalable.

Solution

An AI-based system that complements human expertise in order to quickly and accurately detect whales from aerial imagery. We work with diverse ocean stakeholders to integrate our technology into innovative whale blue carbon initiatives.

Business Model

Target Customers

Maritime transport and energy, government and regulators, environmental consulting, conservation

Channels

Business to business, business to government, collaboration with research and nonprofit

Potential Revenue Streams

Image analysis service for marine mammal detection, bespoke forward-facing automated monitoring

Ocean Impact

We create accessible, reliable and scalable whale monitoring tools for growing whale populations, informing conservation policy, and reducing negative impact.

We are spearheading initiatives to recognize the carbon sequestration value of whales. Our democratisation of whale data lowers the barrier for diverse ocean stakeholders to take conservation action. As a Certified B Corp, we place the ethics of data collection, labelling and usage at the forefront of our technology development.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

1. Scale AI bulk image analysis tool 2. Expand our service to new regions and species 3. Pilot real-time detection using infrared imagery 4. Collaborate on developing whale carbon accounting system

Three Greatest Needs in Next 12 Months

1. Funding for scaling: expanding our team and hardware for scaling processing capacity 2. Visibility and mentorship for reaching new clients 3. Collaborators for real-time pilot projects and hardware partners

Industry Information

Aerial data is used extensively for ocean wildlife management. The status quo is manual revision, which is slow, unstandardized, and non-auditable. We are the only firm developing AI exclusively for whale detection.

The timely delivery of survey results is essential for making important operating decisions, particularly when whale location data are rapidly needed for dynamic decisions, such as for fisheries and shipping lanes management.

Technology & IP

Whale Seeker is the sole proprietor of all background IP required to develop, maintain, use and deploy our AI tools. All IP derived from the development of our solutions is also Whale Seeker's property. We publish in peer-reviewed journals to increase trust in our systems, use trade secrets whenever possible, and will consider patents for specific technological advancements.

Team

Emily Charry Tissier
Co-Founder & CEO

Antoine Gagné
Co-Founder & CTO

Bertrand Charry
Co-Founder & Lead Biologist

