Sustainability Report **2021**

Cuna del Mar

Cuna del Mar Portfolio Companies

This report describes the sustainability efforts of Cuna del Mar portfolio companies: Innovasea, the Center for Aquaculture Technologies, Blue Ocean Mariculture, Earth Ocean Farms, Open Blue and Sol Azul.

cuna del mar

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Reporting Notice

The Journey Continues

The 2021 Sustainability and Environmental, Social and Governance (ESG) Report has been built using the widely accepted Global Reporting Initiative reporting principles and standard disclosures. We are keenly interested in setting goals and measuring our long-term performance in a way that combines social responsibility, care and protection of the environment with business profitability and ethical governance standards.

The Report is intended as a key platform for Cuna del Mar to reflect the progress we are making on our goals and highlight areas that require additional focus for our company portfolio in the future.

Cuna del Mar is a unique business enterprise designed to support the development of open ocean and land-based aquaculture that is economically, socially and environmentally responsible under our OCEANS FIRST seal. The CDM portfolio companies are supported to explore and develop aquaculture methods that meet the OCEANS FIRST requirements. Cuna del Mar invests in businesses linked to that vision through land and water-based technologies, research and feed innovation, genetic research and monitoring capabilities. CDM is a change accelerator pushing innovation in warm water locations, applicable worldwide.

Letter from Robert Orr

As we release our Sustainability Report for 2021, the world continues to face significant challenges because of the COVID 19 health crisis. This crisis is unprecedented in our lifetime and has caused significant upheaval across our company: our hatchery and farm operations, our processing and supply chain sections of our business and our research, monitoring and technical units. It has also put in sharp focus the critical contribution we are making to ensuring a healthy food supply for our global customers. The values of our company back up this commitment.

Starting at the beginning of the pandemic in March 2020, we expanded our focus on the health, safety and wellbeing of our employees and we are focusing on continuing to build an inclusive, diverse, and local workforce.

We have also continued our community building across the portfolio companies by supporting the hiring of a local workforce to close an opportunity gap for diverse talent and by making contributions to benefit the communities where we operate. Many of these communities have been disproportionately affected by the pandemic and we have made efforts to ensure vaccine access to our workers and the provision of masks and other personal protective equipment for everyone on our teams.

We view our business as that of Ocean Stewards, using the foundation of our OCEANS FIRST seal. The OCEANS FIRST seal is Cuna del Mar's commitment to guaranteed quality for more sustainable seafood while protecting the oceans. Our OCEANS FIRST approach is how we provide the best tasting, nutritious and healthy fish, responsibly developed in their native habitat. It is Cuna del Mar's commitment to healthy fish and environments, to healthy people, and communities.

We believe the oceans are vital to humanity. That is why we are fully committed to our OCEANS FIRST approach — our quality guarantee for more sustainable seafood while protecting the oceans. Our range of products, including Sol Azul Oysters, Blue Ocean's Hawaiian Kanpachi, Open Blue Cobia and Earth Ocean Farms Pacific Snapper and Totoaba, are naturally high in protein, rich in Omega 3, and a good source of Vitamin D, critical for human health.

With an OCEANS FIRST approach, we have created and continue to constantly improve on innovative methods in strong current aquaculture to responsibly care for our fish in their native habitat. Backed by first-class research and technology advances our meticulous stewardship from hatchery to maturity, including stringent multistage inspections, means healthy and succulent fish. Cuna del Mar is dedicated to leading the world towards healthier living, from healthy fish to healthy environments, from

Our Values

We conduct business with dignity and respect

We seek excellence in people and systems in the spirit of continuous improvement

We encourage personal growth, initiative, innovation and enrichment

We strive to support our companies in the achievement of goals and objectives

healthy people to healthy communities. Collaborations between the portfolio companies are a strategic area of focus and are increasing in scope, size and complexity.

In this report, we provide updates on our strategy and performance across the portfolio, reflecting progress we made in 2021 as well as plans for 2022. Our goals, as set out in last year's report are:

- Continue support of sustainability advances through portfolio companies
- Refine reporting across companies to introduce specific data points to align measurements for sustainability efforts
- Investigate processes and practices for demonstrating generative and regenerative aquaculture and support diversity initiatives within portfolio companies.

SUSTAINABLE DEVELOPMENT GOALS

There are several areas CDM is focused on for the upcoming three to five years, nested under the United Nations Sustainable Development Goals. These goals, adopted by all United Nations Member States in 2015, provide a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries — developed and developing — in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth — all while tackling climate change and working to preserve our oceans and forests.

Diversity

The first is diversity. CDM is looking to ensure that our workforce in all locations measures diversity goals across all categories, and that targets are set across the portfolio. A diverse workforce is a strong and resilient workforce. Diversity goals should be set against country demographics. The rate of change can be slow considering the specific expertise needed in our sector but we understand that breakthroughs occur and we need to be ready for them. In 2022 and 2023 we will collect data on each location to understand the worker profiles and location demographics. In future we will support human resource efforts to ensure that opportunities are provided to build diversity, recognizing the challenges of ensuring industry expertise in each company.

Climate change

In 2015 the Paris climate agreement was signed by 175 parties who agreed to work together to limit global temperature rise this century to less than 2 degrees C with further reductions to 1.5 C. Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are measured with other GHG compounds to make up the carbon footprint. Agriculture and livestock industries are the primary sources of methane and nitrous oxide, especially for ruminant animals producing methane which occurs during digestion. A 2019 report from the Intergovernmental Panel on Climate Change (IPCC) estimated that between 21 to 37% or one-third of global emissions are derived from food production and transport. As the world population increases, **this impact is expected to rise**. With dire predictions from the world environmental leaders about the critical changes needed because of warming earth conditions, everyone involved in food supply must make changes to reduce our carbon footprint.

Seafood is becoming known as an increasingly important source of carbon-friendly food. In 2018, the last year for which figures were available, worldwide aquaculture production reached an all-time high of 114.5 million metric tons in "live weight," according to a 2020 report by U.N. Food and Agriculture Organization (FAO). Yet, seafood producers must also remain vigilant to ensure we are doing our part to reduce our carbon footprint, especially in the transportation side of our business, both delivering feed to our farms and shipping product to our customers.

Scientists believe that the oceans currently absorb 30-50% of the CO_2 produced by the burning of fossil fuel which slows the pace of global warming on land. But climate changes also can trigger impacts including sea-level rise, more frequent and higher intensity storms, reduction of sea ice and coral bleaching. Climate can be measured along two dimensions based on annual mean temperature and annual precipitation—climatic factors that typically delineate biome and ecoregion boundaries Some early work has been done to measure carbon footprints for some seafood species. The **Seafood Carbon Emissions Tool** is a partnership between the **Monterey Bay Aquarium Seafood Watch®** program and **Dalhousie University** to expand knowledge in this area of seafood sustainability.

Climate Data

At Cuna del Mar, we are building a data set in 2022 to measure the unique climate conditions in our remote farm areas by looking at some key climate parameters. Each farm company currently tracks some climate indicators such as temperature and oxygen, and this year this data will be compiled. In the future, we will expand on this data to track fuel usage across all of the Cuna del Mar companies. Our portfolio company Sol Azul is providing leadership in this area. As oyster producers, they are early indicators of climate challenges. As oceans absorb more carbon dioxide and become more acidic this can shift the delicate balance that supports oyster life. We also recognize that there are carbon impacts out of our direct control such as feed transportation and product distribution. Using the EDGAR tool, which is a global emission inventory of GHGs from the food systems, we will identify areas where we have influence and continue to expand that influence moving ahead.

In 2022 we are undertaking a project to collect baseline data on key climate parameters, expanding the measurement of climate indicators such as temperature and oxygen, to expand data collection focusing on fuel usage. At this stage, **the focus is on gathering baseline data for carbon use directly** in each of the company's direct control.

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Robert Orr, Managing Director, Cuna del Mar

Community Resilience

Solutions are also needed to help communities better prepare for and adapt to the impacts of climate change particularly in tropical settings where many of our companies operate. We will continue to help these communities build capacity for community engagement and response to climate change.

Fish Movement Tracking

As ocean water warms many species may shift their geographic ranges in search of cooler temperatures and feed. As well, these species may move vertically in the water column as warming surface water causes an expansion of low-oxygen zones. There is a lack of knowledge about these movements. Increased participation by ENGOs and fisheries scientists using our fish tracking technology developed by Innovasea will increase our collective understanding of the impacts of climate change and warming ocean conditions on fish movements. Aquatic animals often travel vast distances. Tracking these movements is important in understanding the behavior and ecology of a species and aiding fisheries management and general conservation efforts.

Generative Aquaculture Project

Marine Protected areas provide locations worldwide where these locations can withstand human impact, but these protections are limited. As of February 2021, 17.8% of coastal and marine areas within national jurisdiction, and 1.2% of the global ocean (areas beyond national jurisdiction) were covered by Protected Areas (UNEP-WCMC et al. 2021). Our farm leases in tropical waters are remote, for example the Open Blue lease is 12 km offshore the Caribbean coast of Panama. Typically, the farm sites have a small area of intensive aquaculture with large buffer areas to accommodate long anchor lines and minimize traffic conflicts. We believe that our farm locations can also serve as marine refugia. To better understand how fed aquaculture systems impact the environment (positive and negative) we will combine the objective metrics in place to measure impacts. This multi-year study will align with FAO goals to advance an ecosystem approach to aquaculture and provide us with the ability to draw some conclusions about the impact of fed aquaculture in the tropical marine environment. In collaboration with our fish farm companies, Cuna del Mar is undertaking research to better understand how fed aquaculture systems impact the environment. Phase 1 of the project is the collection of existing farm data (EIS documents, monitoring reports for government and ASC/BAP audit reports etc). This work has already commenced with a review of the three CdM farm companies baseline sediment and water quality data and a literature review to support the construction of a database of relevant peer-reviewed scientific research on fed aquaculture, especially in tropical environments.

While this past year has been and will continue to be a challenge, the resilience and ingenuity of our workforce strengthens our resolve to stay the course on our journey to provide the best seafood solutions for our one planet Earth. With respect and continued success for your own sustainability initiatives.

Sincerely,
Robert Orr, Managing Director,
Cuna del Mar

Innovasea

Fueled by leading-edge technology and a passion for research and development, Innovasea is revolutionizing aquaculture and advancing the science of fish tracking to make our oceans and freshwater ecosystems sustainable for future generations.

With over 250 employees worldwide, Innovasea provides full end-to-end solutions for fish farming and aquatic species research — including quality equipment that's efficient and built to last, expert consulting services, and innovative platforms and products that deliver unrivaled data, information and insights.

Company History

Innovasea, a Cuna del Mar portfolio company, was launched in 2015 with the merger of Seattle-based OceanSpar and Maine-based Ocean Farm Technologies, each of whom had long track records designing and building successful solutions for open ocean aquaculture.

Two years later Innovasea acquired Amirix Systems, the parent of Nova Scotia-based Vemco and Realtime Aquaculture and the Seattle-based HTI-Vemco. This added industry-leading fish tracking and monitoring capabilities as well as real-time environmental monitoring to Innovasea's portfolio of solutions.

In January 2019 Innovasea bolstered its environmental monitoring capabilities by acquiring Norway's Nortek Akvakultur. A month later it acquired Louisiana-based Water Management Technologies, a leader in designing and building intake, effluent and complete recirculating aquaculture systems.

Backed by a relentless passion for technology, today Innovasea offers end-to-end aquatic solutions for open-ocean and land-based aquaculture, aquaculture intelligence and fish tracking.

Aquaculture

Innovasea is revolutionizing aquaculture by combining technological know-how with hands-on industry expertise to deliver innovative, end-to-end solutions that maximize grow-out from egg to harvest — whether on land or in the open ocean.

While its systems are precision engineered around each customer's unique siting, production and monitoring needs — and built to withstand the harshest environments — the outcomes of its work are uniform: Optimized species health. Scaled-up operations. Stable equipment costs. And a partner who's invested in seeing the customer succeed.

Innovasea Today

Innovasea has four business areas:

- Open Ocean Aquaculture
- Land-Based Aquaculture
- Aquaculture Intelligence
- Fish Tracking

Open Ocean Aquaculture

Interest in deep water open ocean systems developed in response to challenges faced by aquaculture operations located near shore. Innovasea is an early-stage pioneer in this space and has developed significant knowledge about the advantages and limitations of deep water technologies and systems. It's all part of what Innovasea calls "precision aquaculture" — a fully integrated system that's helping revolutionize open ocean aquaculture.

Open ocean aquaculture has many advantages: from fish that benefit from reduced exposure to pathogens and disease common in near-shore farms to operations that have less impact on the surrounding environment.

Deepwater open ocean sites have strong currents, high wind speeds and high wave heights. The structures must be able to withstand these conditions, be safe to work on, be cost-effective and suit the species of fish being raised. At Innovasea they've solved that problem by developing submersible pens that can be easily lowered to safe depths so they're not battered by heavy waves and surging storms. The use of this technology reduces the risk of loss of fish from the pens and resulting potential effects on the ecosystem and the farmer's profit.

Innovasea's technology provides remote oversight of the fish from the shore to observe and optimize fish health. Technologies include feed management systems that allow for shore-based remote operations, submerged arterial feed delivery to improve the biological performance of the crop and ongoing benthic monitoring.

Innovasea's underwater feeding systems make it easy to keep fish fed, with a single surface point distributing feed to each pen in the system with minimal loss. Feeding takes place while the pen remains submerged, so it can be done regardless of rough seas or other surface conditions, including algal blooms or parasites. That not only helps minimize missed feed days but it protects fish health and welfare because they prefer to eat beneath the surface as in nature.

Land-Based Aquaculture

Innovasea has been designing and building energy efficient, sustainable water treatment systems for more than 25 years, providing commercial fish farms, government hatcheries, universities, research institutions, zoos and aquariums with ideal growing conditions year-round regardless of location.

The company has unrivaled experience with freshwater and saltwater recirculating aquaculture systesm (RAS) and recognizes that a one-size-fits-all approach doesn't work. It also has exclusive relationships with the top equipment manufacturers, so its systems use only the highest quality components to deliver durability and reliability.

Aquaculture Intelligence

With Innovasea's mobile, cloud-based environmental monitoring technology, fish farm operators have a clear view of the health of their farms from anywhere, allowing for oversight and peace of mind.

Wireless aquaMeasure sensors serve as the central nervous system for the aquaculture intelligence solutions. These submersible sensors track water temperature and depth along with a host of other environmental indicators, including:

- Dissolved Oxygen
- Salinity
- Chlorophyll
- Blue-Green Algae
- Turbidity
- Colored Dissolved Organic Matter
- Wind speed and direction
- Air temperature, barometric pressure and humidity

Until now it's been a difficult and labor-intensive manual process to accurately assess the length and weight of fish swimming in a pen. Innovasea has developed a biomass estimation solution, which combines groundbreaking technology with sophisticated algorithms to help predict with confidence the total weight of fish operators can bring to market at harvest time.

Fish Tracking

An industry trailblazer for four decades, Innovasea's groundbreaking fish tracking technology is helping push the boundaries of science, facilitating cutting-edge research that leads to novel insights into aquatic animal behavior and survival. It optimizes its advanced acoustic telemetry tools and consulting services to shorten the paths from data collection to conclusion, observation to discovery, and detection to protection.

Innovasea became the innovation leader in advanced acoustic telemetry tools and consulting services following the 2019 acquisition of Vemco and HTI, each of whom spent years investing in important research and development. Today we provide work-anywhere solutions that scientists around the world count on to answer important questions about aquatic animal behavior. The broad use of Innovasea acoustic receivers around the globe enables researchers to collaborate across studies and networks by leveraging each others' arrays.

Continuing Innovation

In 2021 Innovasea continued to hone its technologies and develop new solutions for aquaculture and fish tracking. This work will provide the Cuna del Mar companies and others with the tools to track climate changes and improve operational efficiency.

The company is also a thought leader, with more than 35 articles written its staff and broadly distributed to the aquaculture sector in 2020 and 2021. These articles, which are all available on Innovasea.com, focused on a wide range of interesting and informative topics, from assessing peak performance in a recirculating aquaculture system to turning wastewater into energy.

Innovasea is also a vocal proponent of sustainable aquaculture in the United States and beyond. It is an active member of **Stronger America Through Seafood**, the **National Fisheries Institute** and the **National Aquaculture Association.**

In 2022, Innovasea is participating in a Cuna del Mar project to collect baseline data on key climate parameters, expanding our measurement of climate indicators such as temperature and oxygen, to expand data collection focusing on fuel usage. Also in 2022 the focus for Innovasea continues on the further development of cloud-based technology aided by Artificial Intelligence. By developing these tools for farm companies and international fish scientists we contribute to closing gaps in knowledge for understanding the world's oceans and potential changes.

"R&D is at the heart of what we do. Our aim is to advance aquaculture on a global scale by developing new tools and technologies that make it more sustainable and more profitable. And we do that by enabling our customers to optimize production, increase fish health, minimize their impact on the environment and expand into new areas further offshore."

David Kelly, CEO, CTO Innvasea

CAT THE CENTER FOR AQUACULTURE TECHNOLOGIES

The Center for Aquaculture Technologies (CAT) is a Research and Development organization focused on the application of biotechnologies to improve productivity, efficiency and sustainability in aquaculture and related industries.

A joint US-Canada operation with facilities located in San Diego, California and Victoria and Souris, Prince Edward Island, Canada, brings aquacultural expertise and experience combined with a solid background in cellular and molecular technologies and in vivo testing to give CAT a unique advantage in delivering research-based solutions.

The business focuses on health, nutrition and feeds, and genetics: genomics, genotyping, genome editing, and breeding.

Health

Knowledge of the complete health of farmed fish and shellfish is critical for sustainability and business profitability. CAT provides support to third-parties for the evaluation of fish health products and functional feeds, custom pathogen and disease challenge model development and evaluation of environmental and handling stressors on animal health. CAT also provides support for selective breeding programs for aquaculture stocks with family disease testing, allowing genetic improvement to help in improving animal health and resilience to stressors in the marine environment including climate change.

Nutrition and Feeds

The Nutrition Department specializes in providing innovative solutions to improve the performance, cost-effectiveness, and sustainability of aquafeeds. Experts at CAT facilitate the development of products that meet or go beyond the basic nutritional requirements of aquatic species ensuring sustainable growth. CAT provides services to third-parties for the evaluation of novel feed ingredients and feed additives, fish meal and fish oil replacement trials, and digestibility and palatability assessment. CAT offers shadow pricing for novel feed ingredients, feed formulation, pilot-scale twin-screw extrusion of research diets. Associated expertise in nutrigenomics and gut microbiome analysis is available as well. CAT offers a wide range of tank sizes in state-of-the-art facilities to carry out nutrition studies in different animal life stages with in-house nutrition and animal health laboratory services, trial design, feed formulation and manufacture and a quality assurance program.

Genotyping

The CAT Genotyping team provides client-focused solutions and specializes in developing tools to accelerate genetic improvement in aquatic species. Tools support a wide range of applications, from understanding population genetics to selecting commercially important traits using genomic prediction. The company offers SNP genotyping, microsatellite genotyping, custom marker panels, sampling and data storage and support throughout the project.

Breeding and Genomics

The CAT world-class breeding scientists work with their clients to develop and manage selective breeding programs for aquatic species by identifying the key characteristics of the current population, selecting the right tools and designing customized breeding strategies to achieve quantifiable genetic gains. CAT provides selection indices and bio-economic modelling, breeding program strategy, diversity, inbreeding and population structure assessment, breeding value calculation and analyses (EBVs and GEBVs), genome-wide association, studies (GWAS) and marker-assisted selection (MAS). These tailored services result in genetic improvement, and access to proven analytics and computational methods with reliable data that delivers results.

Genome Editing

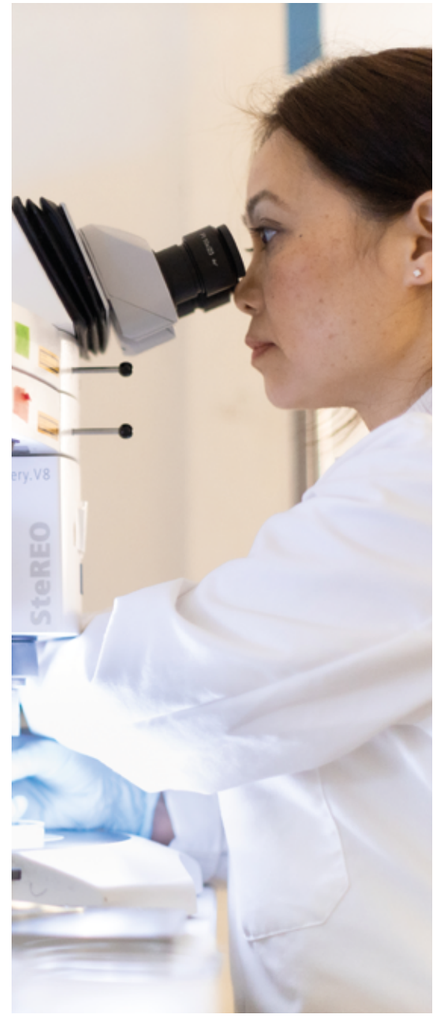
CAT has invested in leadership in the emerging biotechnology of genome editing. This is a novel breeding tool that will revolutionize strategy for trait improvement in aquaculture genetics. The opportunity is to make order of magnitude gains in genetic improvement for aquaculture sustainability and environmental impact, productivity, and consumer benefit. The lead technology is a genome editing approach which allows completely sterile animals to be delivered for grow out, addressing concerns on environmental impact and increasing productivity of farmed stocks, and providing a foundation for the safe and responsible application of additional genome editing technologies for aquaculture.

Impressive growth in 2021 across all areas of the business illustrates the market potential. A continued focus on the global registration of patents worldwide including two genome editing sterility patents covering more than 80% of aquaculture consumption demonstrates the large opportunities for the company.

Positive staffing changes have increased capacity and embedding of the company's core values and business compass from the top down. As important leaders in the field, CAT senior management understands that collective efforts matter and work with like-minded companies and enterprises to be catalysts for change. CAT invests in strategic partnerships with Neogen, an important partner for building genomic tools arrays. They are active members of Biocom, the PEI BioAlliance, the Aquaculture Association of Canada, and the California Aquaculture Association. CAT works closely with certifying bodies, the Canadian Food Inspection Agency, the Canadian Council for Animal Care, and the California Natural Resources Agency.

"CAT is the largest aquaculture contract research organization (CRO) in the world with BSL-3 containment certification. This certification allows CAT to conduct in vivo and in vitro studies with imported as well as domestic aquatic animal pathogens. CAT has expertise with warm and cold/marine and freshwater species."

Dr John Buchanan, CAT President and CEO



Blue Ocean Mariculture

Blue Ocean Mariculture prides itself on contributing to a new conversation about responsible aquaculture that leads to food security, local jobs and the health of those in the communities they serve.

The company, started in 2009, was established to utilize the talents and skills of their team to work responsibly together with a commitment for the present and a heart for future generations. "We see our role as linking the economic and social elements to the ecology of Hawaii. We collected a lot of baseline information when we carefully situated our sea pens, and we continue to collect data to monitor and manage any potential impacts. It's also especially important for us to take our people's views and their perceptions into consideration, and as a result, we're able to balance those perceptions and human needs, and balance the needs of our fish by improving marine environments and building marine economies in a responsible and thoughtful way. It means we are able to really benefit the local ocean economy, benefit the livelihoods of our people while caring for our fish and protecting the environment, and that's what creates a blue economy," says Dick Jones CEO Blue Ocean Mariculture.

As the CEO of Blue Ocean, Dick has an important role to play. One of his key company commitments is the ongoing investment in the international certification by the Aquaculture Stewardship Council. "Our company is the first finfish operation in the United States to achieve ASC certification. Maintaining this key certification recognizes the significant work our company already had in place and marks a major milestone for the State of Hawaii, the US Aquaculture industry, our workers, and our customers", says Jones.

The operations include a hatchery at Hawaii Ocean Science and Technology Park, the sea pens located offshore using Innovasea submersible technology. In May 2022 Blue Ocean completed its acquisition of Kona Cold Lobster, a specialty processing plant located in the Hawaii Ocean Science and Technology Park. This purchase expands Blue Ocean's product offerings to include oysters, crabs, clams and mussels to accompany their locally grown Hawaiian kanpachi. "Versatility and reliability of supply are critical elements for our customers, and we look forward to growing our expanding seafood business. We are especially pleased to welcome the skilled workforce to our expanding team. By ensuring that our Blue Ocean company values of integrity and dedication to excellence are adopted, we will build this acquisition onto a world-class facility in Hawaii", says Dick Jones CEO.

Four other sustainability projects are underway in 2022.

1. In collaboration with two other farm fish companies at Cuna del Mar, Blue Ocean is undertaking research to better understand how fed aquaculture systems impact the environment. Phase 1 of the project is the collection of existing farm data (EIS documents, monitoring reports for government and ASC/BAP audit reports etc). This work has already commenced with a review of the three CdM farm companies baseline sediment and water quality data and a literature review to support the construction of a database of relevant peer-reviewed scientific research on fed aquaculture, especially in tropical environments.

This data review will also help generate a plan for the more detailed analysis that will be conducted in Phase Two. Phase Two will provide us the ability to build some conclusions about the impacts of fed aquaculture in the tropical marine environment. This work could result in a larger, more rigorous version of the sort of report published by Dr. A. Welch in 2019 in the Journal of the World Aquaculture Society (JWAS), where he showed that there were no measurable negative impacts to benthic sediments or water quality around the Open Blue site in Panama.

2. In 2022, Blue Ocean is participating in a Cuna del Mar project to collect baseline data on key climate parameters, expanding the measurement of climate indicators such as temperature and oxygen, to expand data collection focusing on fuel usage. At this stage, the focus is on gathering baseline data for carbon use directly in the company's direct control.

3. Blue Ocean is participating in a monitoring project to help increase understanding of interactions between Endangered Species Act (ESA) listed species and aquaculture net pens. This monitoring effort will provide data to support the design and implementation of measures to reduce interactions with ESA-listed species. The project is focused on the monitoring of Hawaiian monk seal behavior at aquaculture net pens using four autonomous recording cameras attached to Blue Ocean pens.

4. Another important project is underway to demonstrate the benefits of co-culture of macroalgae (seaweed, or "limu" in Hawaiian) and marine fish in tropical offshore environments.

The potential benefits to the commercial fish farm include:

a. Reduced nutrient concentrations in fish farm effluent waters;

b. Additional products for sale to supplement fish farm revenue;

c. Increased social license from positive community associations with seaweed.

This is a two phase project: Phase I is for an initial 6 months of trials on the BOM farm site to demonstrate the technical feasibility of the proposed culture approach. Phase II is for an additional 18 months, to examine the commercial viability of expanded operations.

Goals for 2022

- Continued focus on leadership growth and development
- Successfully continue the collaborative projects designed to enhance sustainability within Blue Ocean
- Leverage ASC certification to increase species and farm awareness
- Increase understanding of larval nutrition

"We are proud to be the only open-ocean mariculture farm in the United States. With first-hand experience in commercial capture fisheries, we understand that farming of the oceans is necessary and inevitable. Yet we also understand that mariculture must be done in an environmentally conscious and safe manner, and with deep respect for the oceans."

Dick Jones, CEO, Blue Ocean Mariculture

Earth Ocean Farms

Nestled in the waters offshore from the arid terrain of the Baja region in Mexico, Earth Ocean Farms, an open ocean aquaculture farm is barely visible in the deep waters of the Bay of La Paz. Earth Ocean Farms started in La Paz, Mexico in 2008, determined to create an innovative and sustainable operation that considered all aspects of their enterprise: growing native fish in an environmentally sensitive way, while integrating the hatchery, farm and processing plant into the economy of this remote part of Mexico.

Earth Ocean Farms raises Pacific Red Snapper and Totoaba. The area where the farm is located is in waters where the seas are calm and the winds gentle for eight months of the year, However, from November to February the weather systems in the region bring strong winds and dynamic currents. The farm system, supported by sister company, Innovasea was specifically designed to flexibly adapt to these high wind and strong current conditions. The farm was sited through a careful process which ensures minimal impact to the surrounding ecosystem and the seafloor beneath, and minimizes any visual impacts, which aligns well with the tourism businesses in the area.

The fish species selection was an important part of the company's evolution. Totoaba (Totoaba macdonaldi) is native to Mexico and was once abundant only in the waters of the Sea of Cortez. The species has been overfished for years and the commercial fishery was closed in 1975 when it was placed on the Mexican Endangered Species List. This species is well suited for aquaculture due to the ease of breeding the fish in captivity and the rapid growth rate. As well, this culture has provided the opportunity for Earth Ocean Farms to release tens of thousands of juvenile fish into the wild to rebuild the stocks and save the species from extinction. In parallel to this beneficent contribution to the restoration of this fish, in 2021 the Standing Committee of the Convention on International Trade in Endangered Species (CITES) agreed to permit Earth Ocean Farms (EOF) to sell their farmed totoaba fish worldwide.

The second species raised by Earth Ocean Farms is Pacific Red Snapper, (Lutjanus peru) a delightful tasting member of the snapper family, known in Mexico as Huachinango. Since most species of snappers generally grow slowly and have moderately long lifespans, they are vulnerable to overfishing and the populations have declined as demand climbs. Once again, responsible aquaculture provides a solution to this dilemma, by meeting the need for healthy tasty fish products for a large group of consumers. Pacific red snapper is a finely textured white fish and with high levels of omega-3 fatty acids, specifically with EPA and DHA at 1.57 per serving size or higher, this fish is an important part of a healthy diet.

Reporting on goals for 2021 and plans for 2022 and beyond:

EOF reports that the hatchery construction was delayed in 2021 due to COVID 19. This is resolved and the new hatchery facility was operational in May 2021. Work continues to fine tune these processes with training of key staff, ensuring full control over water and air systems and make certain filtration systems support water quality objectives are the top priorities for the hatchery.

The newly acquired processing facility has strong SOPs in place meeting export quality standards and EOF achieved Best Aquaculture Practices certification for the plant in 2021. The farm also achieved BAP certification in 2021.

EOF reports the goal to have reliability in the farming systems with supporting infrastructure in place was achieved using the new SeaVolution pens supplied by Innovasea which are installed and performing well. The underwater feeding system to feed an entire grid is currently undergoing testing and the rest of the equipment including the biomass and feed camera system to monitor farm activities are underway. The third grid is acquired and in progress for installation in 2022. The second concession is pending as expanded locations are being assessed for suitability.

The work to achieve regular supply of top-quality snapper juveniles continues and will be an ongoing focus for 2022. The genetic program, working with world-leading genetic scientists from the sister company the Center for Aquaculture Technologies have partnered with EOF to unpack the genetic mysteries of the red snapper to boost productivity and promote faster growth. The development of this customized breeding program is the first of its kind for Pacific red snapper. It will assist EOF to select for specific traits in the snapper stock that show higher production yields through improved growth performance. The elements of the selection will include insights into feed conversion and product yield. It is well understood in the aquaculture production sector that production is greatly enhanced by the rigorous application of genetics and selective breeding programs to choose preferred traits and apply these to breeding and management programs. This can shorten the growout cycle, support the fish to resist disease and ensure that production is increasingly sustainable.

In collaboration with two other farm fish companies at Cuna del Mar, Earth Ocean Farms is undertaking research to better understand how fed aquaculture systems impact the environment. Also, in 2022, Earth Ocean Farms is participating in a Cuna del Mar project to collect baseline data on key climate parameters, expanding the measurement of climate indicators such as temperature and oxygen, to expand data collection focusing on fuel usage. At this stage, the focus is on gathering baseline data for carbon use directly in the company's direct control.

"Like all responsible companies, Earth Ocean Farms ensures a strong connection with its workforce and makes charitable contributions, working with local Food Banks and NGOs, providing fish donations for the most vulnerable populations. In addition, the partnerships with Universidad de Baja California Sur, CIBNOR and CICICMAR make important contributions to increasing local knowledge, and extending opportunities for youth in employment."

Pablo Konietzko, Director General, Earth Ocean Farms

Open Blue

Since their first sustainability report in 2014, Open Blue has continued to make progress in strengthening its position as a global leader in economic, environmental, and social responsibility in aquaculture.

In Harmony with the Ocean

The company started in operations in 2009 farming cobia, a nutritious native white fish. The farm is situated 12 km offshore on the Caribbean coast of Panama, and uses an innovative SeaStation technology provided by Innovasea which consists of strongly anchored submersible pens that can be lowered 10 meters below the surface. Open Blue is guided by their company Vision: To feed current and future generations in harmony with the ocean.

The company puts a strong focus on worker protection. The ongoing COVID situation created many challenges, but the Health and Safety team has been working hard to ensure the protection of all front-line workers in the hatchery, on the farm, and at the processing plant, providing personal protective equipment and issuing guidance to reinforce prevention measures.

Despite all of these challenges, work continues to move ahead, with a focus on strategic sustainability priorities. One of the key areas of focus is in the development of a diet which meets all of the health and digestibility needs of cobia, contains omega fatty acids to meet the needs of our consumers, and reduces any potential impact on fish meal and oil supplied from wild-caught fisheries.

From December 2016 to July 2019 Open Blue conducted 12 formal feed studies looking at protein requirements, the differential in feed uptake in males and females, vaccine in feed, replacement ingredients for traditional fish meal and fish oil, and digestibility studies. The current feed is now formulated using fish meal and oil from processing plant by-products, which greatly reduces the need for the use of wild-caught fish ingredients, closing the loop for sustainable production. As well, there was a significant improvement in overall survivability and a continued reduction in the use of antibiotics through the implementation of natural immunostimulants, and improved feed formulation, and strict feed quality control.

In addition, in 2021 Open Blue steadily reduced the harvest size through the development of more value-added products, allowing for more efficient feed conversion. Monterey Bay Aquarium conducted an audit of Open Blue as part of their ongoing diligence on the Seafood Watch ranking and determined the continuation of the yellow rank as a Good Alternative Buy. The Seafood Watch program acknowledged the progress being made to source and research alternative ingredients to reduce reliance on capture fisheries for feed.

In 2022, Open Blue will continue with the research focus on testing fish oil replacement with algae oil as this ingredient is now commercially available. They are developing new partnerships with nutritional researchers to test low Fish In Fish Out (FIFO) high-performance diets. There will be a partial harvest of 2 kg average fish after a 5-month growout for a significant reduction in overall Feed Conversion Ration (FCR).

They are aiming for antibiotic-free growout through strict feed quality control and continuing with the natural immunostimulant feed additives. There will be a continued focus on the North American marketplace partnering with retailers and foodservice operators to drive awareness of this healthy food choice.

Open Blue will partner with the two other farm companies and Cuna del Mar to undertake a collaborative project to better understand how fed

aquaculture systems impact the environment. Phase 1 of the project is the collection of existing farm data (EIS documents, monitoring reports for government and other reports). This work has already commenced with a review of the three CdM farm companies' baseline sediment and water quality data and a literature review to support the construction of a database of relevant peer-reviewed scientific research on fed aquaculture, especially in tropical environments.

Also, in 2022, Open Blue is participating in a Cuna del Mar project to collect baseline data on key climate parameters, expanding the measurement of climate indicators such as temperature and oxygen, to expand data collection focusing on fuel usage. At this stage, the focus is on gathering baseline data for carbon use directly under the company's direct control.

"Our collaborative approach with significant investment in research is continuing to build a strong foundation for the future. We are facing the future with confidence and a strong imperative to use our resources to provide a superior, nutritious product for a growing world population."

Dario Marchetti, CEO, Open Blue

Sol Azul

Imagine a pristine ocean location with the sound of the wind and the waves in the background, where oysters can be chosen selectively from the racks stretching far out to sea. Founded in 1994, Sol Azul is Mexico's largest controlled producer and exporter of the Pacific oyster (Crassostrea gigas) and the Kumamoto (Crassostrea sikamea) variety.

Sustainable Culture of Bivalve Mollusks

It is a remote site, free of any sources of pollution, ideally suited for the sustainable culture of bivalve mollusks due to its excellent water quality, temperature, tidal range and water currents. "Sol Azul cultivates year-round, the finest export-quality oysters, selectively bred from choice cultured stock, consistent in size and shape with the delightful fresh taste of the sea."

The Sol Azul facilities are located on the western coast of the Baja California Peninsula within the El Vizcaino Biosphere Reserve, a UNESCO World Heritage Site. This is a place where many biological wonders thrive, including nursery pods of grey whales.

In the United States, Sol Azul oysters are marketed under the Sanctuary brand sanctuaryoysters.com. The oysters are celebrated for their superb quality, freshness and impeccable clean taste. Sol Azul organic oysters are the freshest and healthiest, surpassing the most demanding international norms and standards. They are certified organic under the European Community Standards, also with the Monterey Bay Aquarium Seafood Watch, Fish Choice and Fish Wise validation. Aquaculture Stewardship Council certifications provide annual independent audits of the facilities and other recognitions from Sea Choice, the Blue Ocean Institute and New England Aquarium, which round out their endorsements.

Like all other companies around the world, Sol Azul worked hard over the past two years to manage the impact of the COVID 19 outbreak on the team and customers. The company was able to achieve a 100% successful vaccination rate across the team. They continue to provide equal opportunities across the business for their qualified workforce with an almost equal distribution of jobs between men and women (30 females and 54 males). Providing child-care to these working families is an important part of what makes this successful. "Sol Azul is actively involved in the local community, where they support mangrove planting in the area, and serve as a member of the Technical Committee for El Vizcaino Biosphere Reserve with a group of dedicated people to preserve the thoughtful management of this important area," says Phillippe Danigo, founder of Sol Azul. Phillipe was born in Bretagne, France, where his family has been culturing oysters for four generations and he has had a significant positive impact with his forward-thinking approach to the reduction of climate change and supporting local communities.

As an example of this forward-looking approach on climate change challlenges, Sol Azul provided their template for the Cuna del Mar project to collect baseline data on key climate parameters. During 2022 Sol Azul will start to operate two Solar Plants, one at the new hatchery with an installed capacity of 250 KW, able to supply up to 80% of the needs during 24 hours. The other plant will be positioned at the farm with an installed capacity of 100 KW able to supply up to 90% of the needs during every 24 hours. "Our activity naturally leads to protecting the environment," says Phillippe Danigo, founder of Sol Azul. "To obtain a healthy product, it has to be developed in a healthy environment. Our oysters and our facilities work hand in hand with the protection and care of the environment."

Goals for 2021 achieved

Despite all of the covid challenges, the farm achieved historic production levels in 2021 with the accompanying historical sales, average price increases and a successful launch of the retail boxes in selected supermarkets and grocers.

Working with Cuna del Mar partners, Sol Azul completed the reproduction of the genetic nucleus at EOF for the fifth generation under CAT guidance. The new hatchery construction began on schedule in 2021 and is scheduled to begin testing in early 2022. In the previous facility, the hatchery met the 2021 stocking plan with less seed than budgeted due to higher survival. "Excellent control and spending oversight by all departments positioned us well below the budget due to high efficiencies and good business decisions, the team is to be congratulated," says Danigo. Sound environmental stewardship is at the forefront of all our endeavors, sustainably raising world-class oysters with superb quality and an impeccably clean taste.

In 2022, revenue and sales had an extraordinary performance pairing the high production volumes with increased prices. This profit will support the hatchery construction expenses and the increased focus on the trials and start-up equipment at the new hatchery. There will be an increased production of seeds in 2022 with continued increased growth in 2023. This will necessitate the preparation of equipment to implement the new protocols for the over 50% increase in production by the end of 2022.

"Excellent control and spending oversight by all departments positioned us well below the budget due to high efficiencies and good business decisions, the team is to be congratulated. Sound environmental stewardship is at the forefront of all our endeavors, sustainably raising world-class oysters with superb Quality and an impeccably clean taste."

Phillippe Danigo, Founder, Sol Azul

Sustainability Report 2021

Cuna del Mar

The Cuna del Mar 2021 Sustainability Report has been built using the widely accepted **Global Reporting Initiative** reporting principles and standard disclosures. We are keenly interested in setting goals and measuring our long-term performance in a way that combines social responsibility, and care and protection of the environment with business profitability.

The Report is intended as a key platform to describe our approach to managing our social and environmental performance, reflecting the progress we are making and highlighting areas that require additional focus for our company in the future.

We welcome your comments at **info@cunadelmar.com**

Written by Walling and Associates Consulting Ltd