APONIENTE

PRESS BOOK 2022

Fishing, harvesting & cooking from the sea
Creating the marine pantry of the future

Aponiente is the restaurant led by chef Ángel León, who is known worldwide for his commitment to the preservation and management of the Ocean through his research into new ingredients which reduces the fishing pressure and promote sustainable fishing practices. Ángel León employs marine species that were historically discarded from the sea, even unknown to the human being. This revolutionary and avant-garde chef has discovered new ingredients from the huge sea pantry, such as marine phytoplankton, and grown for the first time in history plants such as the *Zostera marina*.

That's why he has been awarded with **Three MICHELIN Stars and the inaugural Sustainability Award MICHELIN Green Star** (first-ever green-Michelin-starred restaurant), in recognition of his unwavering commitment to sustainable gastronomic practices. Aponiente ranked **#79 in The World's 50 Best Restaurants 2021**.

His deep respect for the sea and its enormous capacity for innovation have led him to develop several projects related to bringing back to life products that have been undervalued by reinventing and recycling them. Every day, Aponiente Tripulación immerse themselves in their dream, in the waters of the Bay of Cádiz in the south of Spain, Andalusia (close to Africa, just separated by a 14km-wide strait).

The application of the ecologic theory in his kitchen, the investigation, the gastronomic creativity and maximisation of the product, together with the work for environmental awareness are the hallmarks of Aponiente's cuisine. Gastronomic examples of this are: Creativity and pure use of each product are the hallmarks of Aponiente's cuisine. Some examples of this are the mackerel sobrasada, the sea bass mortadella, the sea ham (red tuna belly), the spotted sea bass sausage, the sea snails skewer & its tripe, the moray eel skin turned into crispy pork skin, the hake collagen prepared as noodles, the tuna tail's osso buco or the tuna tart tarte tatine. Other samples of Aponiente's team work are the applied research that Ángel León developed since 2009 with Fitoplancton Marine, S.L. to obtain the authorisation from the EU for human consumption of foods and ingredients obtained from marine microalgae, becoming the first novel food created by a Spanish person (2014); the use of discarded fish; the development of the marine sausage elaborated with fish protein; the elaboration of marine honey, or the domestication of the Zostera marina for its growth in estuaries and the extraction of the marine cereal, pioneer in the world.

Aponiente focuses all its efforts into obtaining new development that will allow to continue creating marine dishes to re-define the concept of gastronomy as a transforming power for today's society, and tackle important challenges such as the preservation of nature through cooking, collaborating with international NGOs.

Consequently, Aponiente holds a strong international presence, also organizing a global chefs encounter named *Despesques*, based on sustainability and the reflection on the role of food in the future.

Aponiente continues to demonstrate the vital connection between gastronomy and nature. And he challenges us to think about our ignorance on the infinite and mysterious sea, enhancing discarded species and promoting the preservation and management of the coastal marshes, estuaries and wetlands as sources of marine life.

As part of his compromise with the diffusion of this message and raising awareness toward a more engaged and sustainable cuisine, as well as the research and investigation and development of Aponiente's projects, chef Ángel León repeatedly holds talks and participates in the most prestigious national and international congresses, as in many Academic institutions as Harvard University, the King Abdulah University, or The Culinary Institute of America.

Ángel León continuously organises and supports different educational projects. He has published a book *Chef del Mar* (Montagud Editores) and recording many seasons for his own TVE show *"El Chef del Mar".*

Ángel León has received wide recognition and awards:

*** MICHELIN

*Green MICHELIN

World's Most Sustainable Restaurant Award - The World's 50 Best Restaurants 2022

#79 The World's 50 Best Restaurants 2021

3 Soles Guía Repsol

#57 Opinionated About Dining

2021 Premio Nacional a la Investigación e Innovación Gastronómica (Real Academia de Gastronomía).

2019 Grand Prix de l'Art de la Cuisine (Academia Internacional de la Gastronomía).

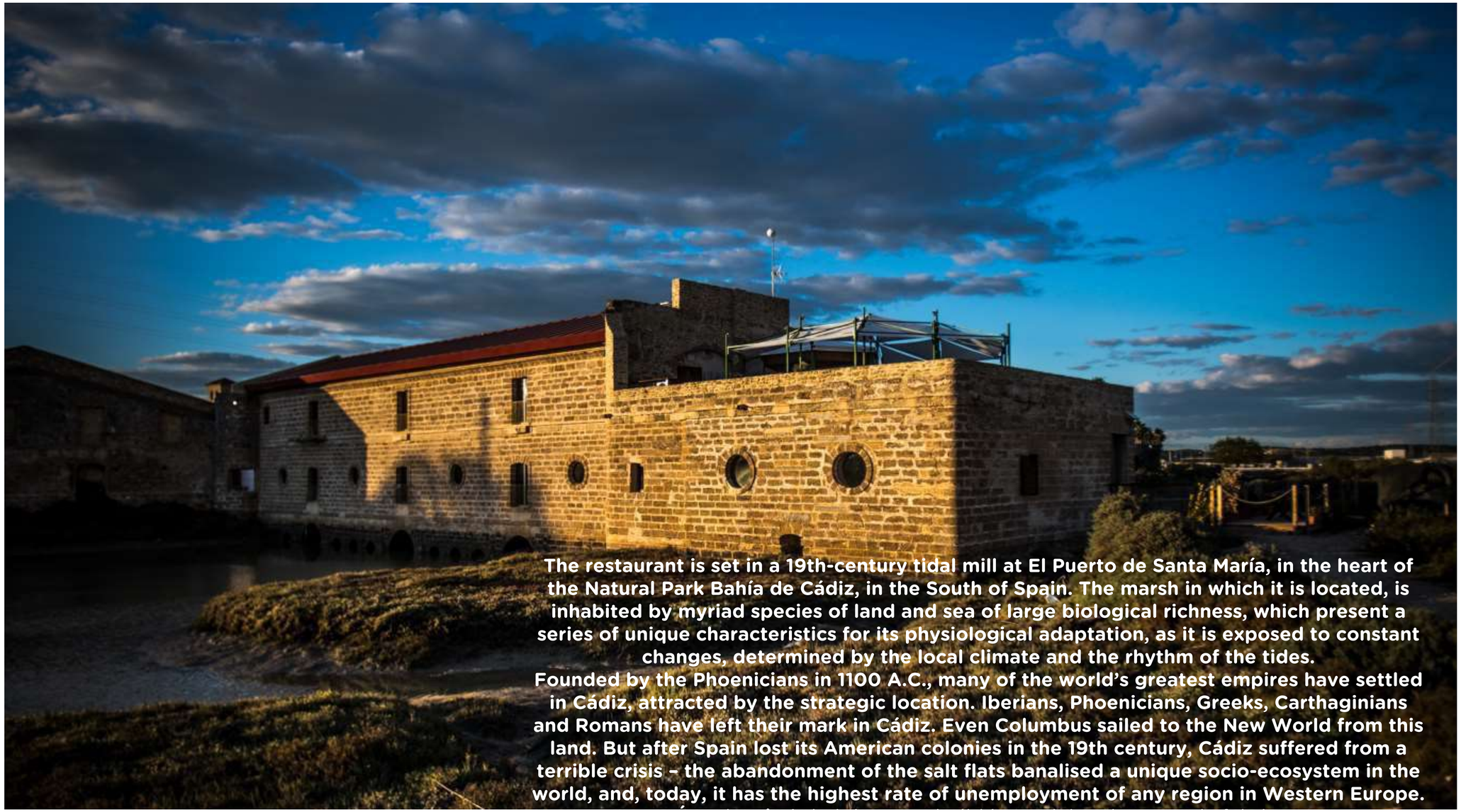
2017 Ambassador of the Oceans by the European Comission D.G. Mare (U.E).

2016 Award "Empresa y Biodiversidad" Fundación Biodiversidad – MAGRAMA

2014 Medalla de Andalucía

2012 Premio Nacional de Gastronomía

2011 Premio de la Academia Internacional de Gastronomía, categoría Chef L'Avenir



The restaurant is set in a 19th-century tidal mill at El Puerto de Santa María, in the heart of the Natural Park Bahía de Cádiz, in the South of Spain. The marsh in which it is located, is inhabited by myriad species of land and sea of large biological richness, which present a series of unique characteristics for its physiological adaptation, as it is exposed to constant changes, determined by the local climate and the rhythm of the tides.

Founded by the Phoenicians in 1100 A.C., many of the world's greatest empires have settled in Cádiz, attracted by the strategic location. Iberians, Phoenicians, Greeks, Carthaginians and Romans have left their mark in Cádiz. Even Columbus sailed to the New World from this land. But after Spain lost its American colonies in the 19th century, Cádiz suffered from a terrible crisis – the abandonment of the salt flats banalised a unique socio-ecosystem in the world, and, today, it has the highest rate of unemployment of any region in Western Europe.

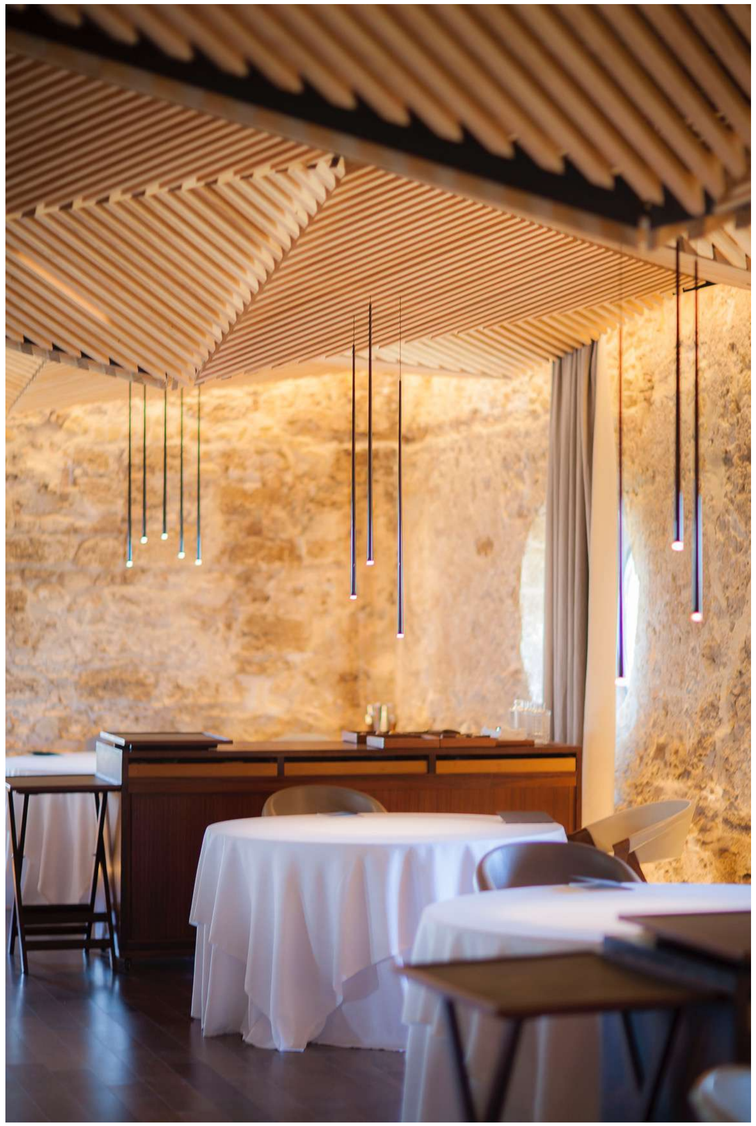
BIODIVERSITY AND LOCAL TRANSFORMATION

Aponiente is not just a restaurant, but an ambitious project whose aim is to reactivate and recover the environment surrounding the restaurant, by restoring the ecosystem and re-establishing the natural balance, taking care of the natural capital of the marshes to promote the ecosystem services, obtain foods due to its rich biodiversity, and as a source of income, wealth and employment for the area.

Bringing light and brightness back to the sea and the marsh is part of Aponiente's DNA. More than 70 acres of a maritime-terrestrial ecosystem have been recovered in the Natural Park Bahía de Cádiz, and in these recovered habitats more than 300 species of terrestrial and marine invertebrates, terrestrial and marine and terrestrial flora and fauna (with fish and birds as sentinel species) develop so that society becomes aware of their importance and commit to their defense and conservation.

A relevant project has been the restoration of the San José salt marshes, recovering their ecosystem and enhancing the biodiversity of a vital area for development of halophilic species and the reproduction of animal species of great natural, social and economic interest. A habitat that was abandoned has been recovered for resident and migratory birds such as the plover, black-tailed needle or osprey.

The recovery of marshes and estuaries such as the old Salina Balbanera and the experimental growth of Zostera marina plays a key role in tackling the consequences of climate change. The production of oxygen, the Carbon fixing, the recruitment of aquatic communities that generates the restoration, conservation and maintenance of these natural reserves through the creation of multitrophic systems mitigate the loss of biodiversity, ocean acidification or potential flooding in urban areas as a result of sea-level rise. These coastal wetlands are key socio-ecosystems for the reproduction, feeding and resting of threatened or endangered species, and their recovery reconciles us, partly, with the planet.

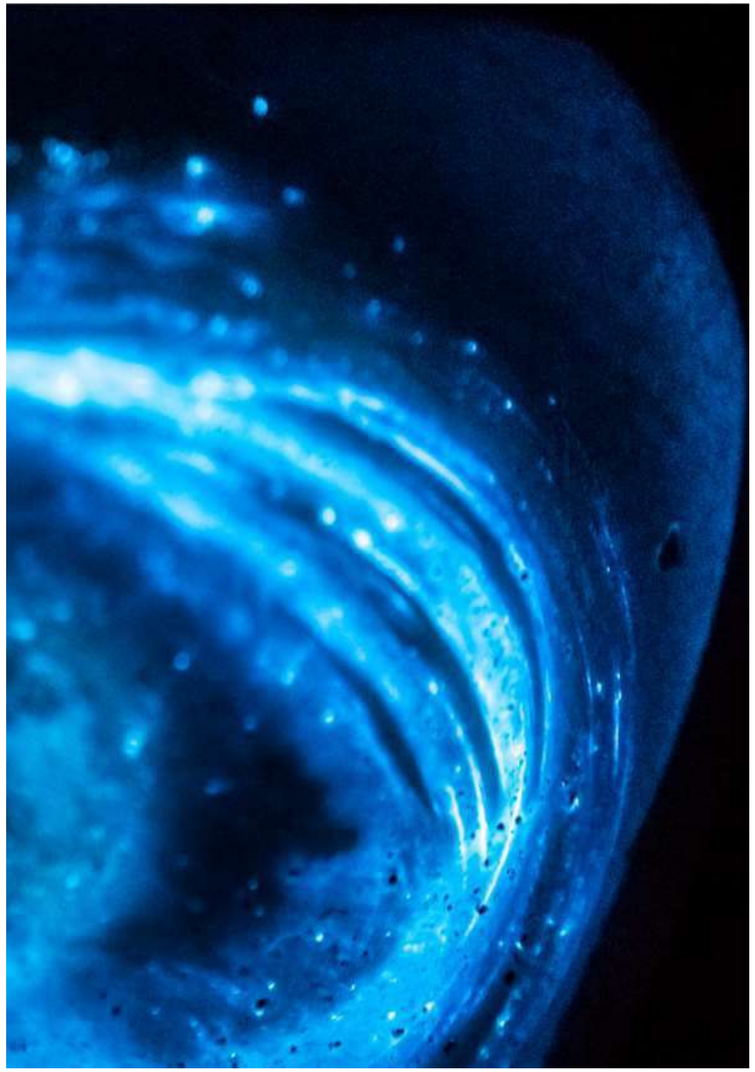


APONIENTE R&D

One of Aponiente's social objectives is the scientific and technical investigation, officially certified activity by the Ministry of Science, Innovation and Universities of the Government of Spain trough the Center for Industrial Technological Development based on the compliance with the scientific and technological requisites, as it it accredits the development of Research, Development and Innovation projects, in order to improve the present and future of our society.

The imagination of Ángel León and his team goes beyond observing the extraordinary, discovering new products and embarking on new culinary challenges. For more than a decade, in Aponiente, species are observed and investigated looking for new foods and products still hidden from the large sea pantry with the aim of incorporating them into the human diet. And it seeks its maximum use with the minimum environmental cost for our planet and, of course, for the sea.

The discovery of these unknown ingredients through the research work of the Aponiente R&D Department is therefore crucial. Over the last 11 years, more than 30 research projects have been carried out with the aim of reducing fishing pressure at high trophic levels and having a high nutritional value in addition to new sources of marine proteins, contributing to the health of marine ecosystems. This list includes, for example, phytoplankton and its natural pigments, fats of marine origin, marine sugars, marine sausages, marine ham or marine cereal, as well as techniques (albumin-free clarification using microalgae, marine collagens or live salt) and cooking methods that demonstrate an authentic commitment to the recovery and improvement of the environment and the search for a better future for the planet.



MARINE CEREAL – THE NEW SUPERFOOD

The Aponiente Gastronomic Research Laboratory has managed to grow Zostera marina and obtain its most coveted product, the marine cereal, in a controlled way for the first time in history. This milestone has never been achieved before. In 2017 began this pioneering project in the world that also contributes to recover this threatened and indigenous species, as it is helping to generate greater marine biodiversity enriching the marine environment to fight the consequences of climate change.

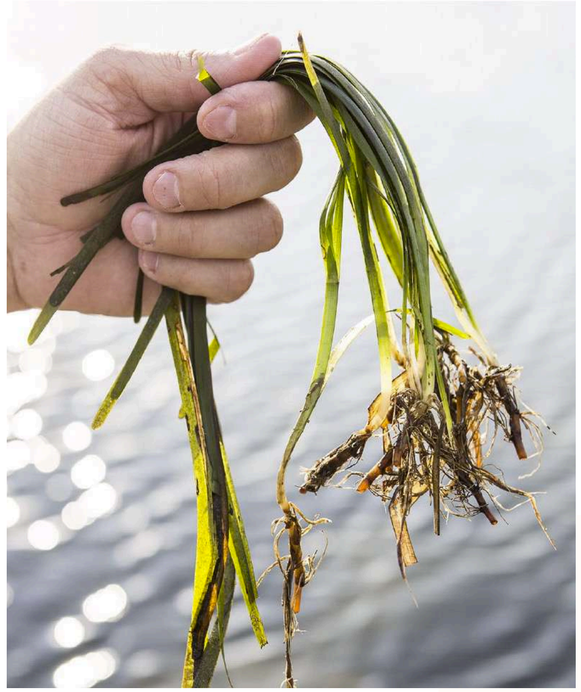
The "marine cereal" is a superior plant, an angiosperm that grows in the sea; this aquatic grass or marine phanerogam is called Zostera marina.

4.6 billion years ago, in a primordial sea, life emerged on our planet, so that all the species that today develop in the terrestrial environment had a marine origin. Numerous species were colonizing the terrestrial environment, such as terrestrial plants or Embryophyta, and developed flowers and fruits. It is known that, 100 million years ago, a group of these embryophytes, the marine phanerogams, set out on the way back to the ocean, adapting to live submerged. The Zostera marina is one of the four marine phanerogam species that exist in Cadiz and that currently grow naturally. Aponiente's team found it years ago on one of their usual underwater expeditions in which they study different marine vegetables, and confirmed its importance by reading a scientific article published in Science.

The experimental cultivated area is 3,000m2, located in the Bahía de Cádiz Natural Park.
The company that manages Aponiente is recognized as a Collaborating Entity of the Ministry of Agriculture, Fishing, Livestock and Sustainable Development of the Junta de Andalucía in the Wildlife Management Section of the Andalusian Registry of Wild Flora and Fauna.

It has also been possible to verify that "sea cereal" or "sea rice", as some call it, can not only be used for human consumption, but that its unique nutritional properties make it a new superfood.

More Information: www.cerealmarino.com



DISCOVERING NEW INGREDIENTS

The obsession of the Aponiente team led by chef Ángel León is the search for new foods in the sea that will replace what the land offers, certain that every ingredient that can be found or grown on land has its namesake in the sea. Since its opening in 2007 Aponiente has unveiled more than 40 new ingredients from the sea, a handful of new culinary techniques and the use of species and marine elements never used before.

ALGAE FOR HEALTHY WORLD (A4HW)

The Algae for Healthy World (A4HW) project aims to develop the necessary biotechnological tools to improve and optimize the production of biomass and increase the concentration of biocompounds with high added value for the human food sector (mainly pigments-antioxidants) from different microalgae, focusing its developments on different strains of *Spirulina, Nannochloropsis gaditana* and *Pyrocystis*. The results of the project were validated in the microalgae pilot plant managed by Endesa in Almería in order to demonstrate the uses of microalgae and their extracts of interest in the food sector.

CREA&MAR

This is a cooperative experimental development project aimed at obtaining new commercial products from aquaculture fish and fishery discards. The aim of the project is the development of new processed products through innovation in their processing and the development of new forms of presentation. This project has been co-financed by the European Regional Development Fund (ERDF) and the Center for Technological and Industrial Development (CDTI).

FISH REVOLUTION

This project aims to improve the diet of children who eat in school canteens by providing them with more fish on their menus, but not in its original format. Ángel León's new fish-based product reaches school canteens in the form of *tagliatelle*. The fish is transformed into a pasta speciality with the aim of winning over children and making better use of marine resources. *Fish Revolution* is a joint venture with the social catering company Compass Group España and the multinational company specialised in fishing, farming, processing and marketing of seafood products, Grupo Nueva Pescanova.

PRODUCTS FROM THE SEA PANTRY

- **SEA HONEY:** This marine honey comes from a sea plant called *Maritime Rupee* extracted from the estuaries of Trebujena (Cádiz), ideal for its salinity. To obtain it, the plant is dried for two weeks and then atomized and passed to the water. Next, for the dissolution of sugars, its pH is adjusted with calcium. With the aim that any remaining protein coagule is raised in temperature and the mixture is cleaned. The mellow texture is achieved through evaporation at low temperature. This honey has the same nutritional qualities as honey, although it has salty nuances making it unique. In addition, Ángel León has found the perfect "honeycomb" for it in the *Durvillaea antarctica* seaweed.

- **MARINE OILS:** For years we have worked at Aponiente to achieve 100% marine oils made through lipid extractions of microalgae. After working for several years with these interesting extracts, this line has evolved to develop a coupages of Extra Virgin Olive Oil (AOVE) with marine phytoplankton and harissa oils.

- **MARINE COLLAGENS:** Fish scales represent one of the largest residues of fish cleaning. Currently, the uses of these scales for human consumption are very scarce. However, collagen is the most abundant protein in the human body, source of amino acids and is the largest part of the extracellular matrix. The flakes of the fish that is cleaned in Aponiente constitute a source of collagen, with which gelatin leaves, gelling powders, emulsifiers and even proteic contributions are generated, very interesting proposals that turn a residue into a product with enormous potential.

- **SEA WORM:** This sea worm, Sipunculus nudus, with a size between 20 and 35 cm., lives in sub-tidal areas of sandy shores. In our latitudes it has traditionally been used as bait for fishing, but in oriental cultures such as China or Vietnam it is a very precious product for human food, with interesting organoleptic and nutritional characteristics, in an attempt to make the most of what the sea has to offer.

PRODUCTS FROM THE SEA PANTRY

- **BACON 3:** Marine bacon is made using the belly of the sea bass (*Dicentrarchus labrax*). This product has managed to take advantage of a byproduct discarded by the industry in the processing of sea bass, reusing the stomach to create a meat-like product, but 100% marine and high quality.
- **GASTROECOLOGY OF THE MARINE TROPHICS:** Aponiente is preparing a systematic catalogue of marine species (plants and animals), ordered in Filos and Taxones, which can be used by humans, either adapting their natural conditions ex situ, as it has already been industrialized with marine phytoplankton.
- **SEA CHESTNUTS:** *Enhalus acoroides* is a marine aquatic herbaceous plant that lives in underwater environment, forming part of the group of marine phanerogams; it was distributed by the Cossacks of the Indian and Pacific Oceans, which contains a robust rhizome, with persistent fibrous remains of the leaf pods, and whose fruits we could define with the name of sea chestnut.

PRODUCTS FROM THE SEA PANTRY

DAIRY-FREE CHEESE

Aponiente has spent more than two years looking for acceptable milk substitutes. The result is marine milk, a product that brings together the properties of cow, goat and sheep milk, and which is handled in the same way as a traditional cheese. Three different recipes have been developed, for soft cheese, hard cheese and lactic curd.

SEA POTATO

As a side dish for our sea shank, we are working with a new species – a new ingredient that is similar to other species used in various parts of the world like Asia and Latin America. A filter-feeding organism, it bursts with the flavor of the sea. We discard the hard outer layer, and use the inside to make a mashed potato dish that is the perfect side for our sea shank.

TUNA SHANK

This part of the tuna, the tail, usually left over and discarded after the quality control process, is used in Aponiente. It is stuffed with bone marrow and truffle, baked, glazed with its own demiglace. This dish is a tribute to the distinguished chef Santi Santamaria, who contributed so much to the Spanish cuisine. The inner tendons, which have a unique and incredible texture, deserve special mention. Pure collagen, even more gelatinous than the tendons of veal and other animals of the earth, makes it a unique snack.

GOBY

Gobius paganellus is a species without commercial interest that, at least in Cadiz, is used as live bait for fishing with other fish hook. The toad does not have hard bones but rather flexible, as a result of recent weather conditions, with temperatures higher than normal in the Trebujena estuaries. And with them they recreate the 'chanquetes', offering a solution to the unwanted presence of this species in extensive and semi-intensive estuaries.

BRYOZOA

Colonies of *bryozoa* can be found all along the Bay of Cadiz, although this shouldn't be the case. The organisms feed on phytoplankton and zooplankton, thus displacing other species which share the same eating habits. At Aponiente, taking advantage of the discovery of marine sugar, we make our own pumpkin dessert with *bryozoa*, known as *Cabello de Neptuno.*

SEA HAM

Fruit of the collaboration of Ángel León with the company Petaca Chico is born the ham of the sea; a product made with bluefin tuna of almadraba, cut in the shape of a paddle and with a process of curing similar to that of ham. The production process is based on the traditional method of maturing, curing and drying the ham, but taking into account the specificities and additions necessary to work with a marine protein.

SOCIAL & ECONOMIC CONTEXT IN CADIZ

Today, more than 5,373 hectares of old salt flats were carved by hand by our ancestors since Phoenician times, today abandoned in the Bay of Cádiz.

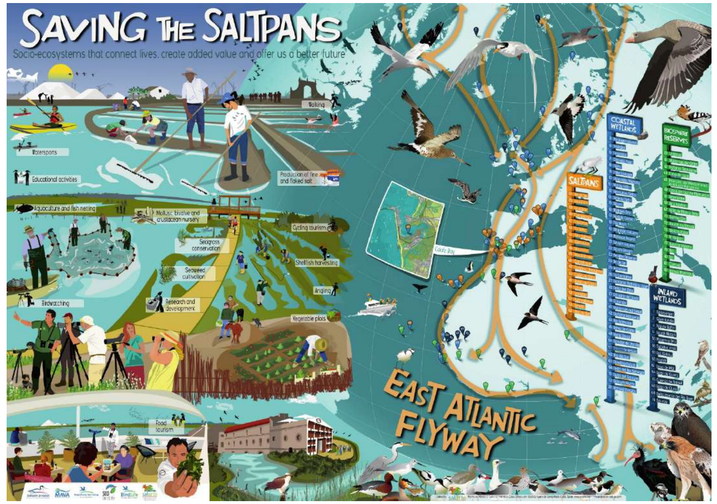
There is a latent crisis in the Bay of Cadiz. The traditional management system of artisanal salt flats is at serious risk of disappearing, and those traditional salt flats that persist, do so by combining other activities and businesses, and do not do so for economic benefit, but to preserve culture and tradition.

In the lower Guadalquivir, 70% of the agricultural land is fallow this year due to the lack of fresh water, and therefore its owners are in a complicated situation. Only a few highly efficient and highly professional marine farms maintain their activity, generating a very high quality estuary fish, as well as the sea salt mines in Doñana, which remain at optimal activity rates.

An artisanal salt mine, a multitrophic estuary and a salt marsh, as multidimensional spaces that are, are scenarios in which different initiatives and activities can be brought together. The generous aptitude of the salt marshes offers socioeconomic possibilities, in the 21st century, that go far beyond producing salt or fish of the highest quality estuary. Marine salt pans and estuaries are therefore coastal pastures where, in order to ensure their survival in such a globalised world and where there is a high degree of commercial competitiveness, they need to broaden their vision and adapt to the criteria, needs and demands of the 21st century, including gastronomy, ecotourism and involving all productive sectors.

The joint alliance between Aponiente, Salarte, Birdlife International and Mava Foundation seeks to create an integrated and dynamic ecology in degraded environments through the recovery and management of artisanal salt mines, multitrophic aquaculture and traditional navazo crops. The objective is to encourage young entrepreneurs, entrepreneurial professionals and qualified local people to establish their activity in the Bay of Cadiz to work and promote the creation of new jobs based on innovation and the use of natural heritage.

- 5,373 Ha of unmanaged and degraded wetlands
- 27% Unemployment rate up to now (2022)
- Overqualified professionals in low-paying jobs
- Chronic shortage of unemployment
- 42,4% of the population living below the poverty line
- Undervalued natural and cultural assets
- Low investment region



LOCAL COMMUNITY SUPPORT

- WORLD CENTRAL KITCHEN: in 2020, Ángel León connected Chef José Andrés from World Central Kitchen and switched on Aponiente kitchen in order to feed the most affected people in the province of Cádiz. Every day, more than 350 meals were prepared by teams of volunteers to combat the Covid-19 crisis.

- Aponiente is a restaurant dedicated to supporting the local community from its beginnings, when it moved from its headquarters in Calle Puerto Escondido 6, to the Molino de Mareas El Caño. They worked on the rehabilitation of the building and the recovery of the Salina de San José, which has been used as a landfill for decades and was destroyed and abandoned.

- Cession of the Molino de Mareas for Fondo Custodia for the Custody and Recovery of the Salt Marsh for assemblies, meetings, projects and visits.

- The Annual Programme of Activities of the Chef del Mar Gastronomic Research Laboratory includes 37 days of school visits in which a total of 50 students/day are offered a full program of outreach activities, educational workshops, and training for school groups, university students, and vocational training students. In short, an average of one thousand (1,000) schoolchildren participate each year in free educational and training workshops at Aponiente.

- Support for local suppliers throughout the season. Consumption of vegetables from local suppliers. Purchase of products and permanent support for traditional fishing families.

- International cooperation to help the Comcaac-Seri indigenous community through the environmental restoration of the Sea of Cortez and the promotion of the conservation of the prairies of Zostera marina.

- Annually, they organize a big gastronomic event for local people, sharing our unprecedented cuisine with everybody and fundraising money for charity associations.

- Permanent assignment of the space as an exhibition hall for artists in artistic and cultural exhibition programs.

APONIENTE

THANK YOU

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