

CHRONOMETER

DENISE LIRA-RATINOFF

In collaboration

PATRICIO AGUILAR DIAZ

2019









CHRONOMETER

To contain, to transfer, to care for, to feed...choking, vertigo, precipice, anguish, fear, silence, life, death, reflection, wait, time, vibration, odor, feel, half-light, breath...experience, consciousness...

Some of the sensations that come to mind upon experiencing CHRONOMETER, an installation composed of solid residue bails installed from floor to ceiling, delimiting a space in which only a narrow corridor is left, where the viewer circulates, feeling the choking from the residues that surround him.

Maintaining the walk, within this labyrinth of residues, he meets glass that closes his way through, where a photograph of a glacier can be seen attached to a black wall. Under the photograph of the glacier, there is a digital chronometer that indicates the passage of time. The pulse, the palpitation of the constant threat.

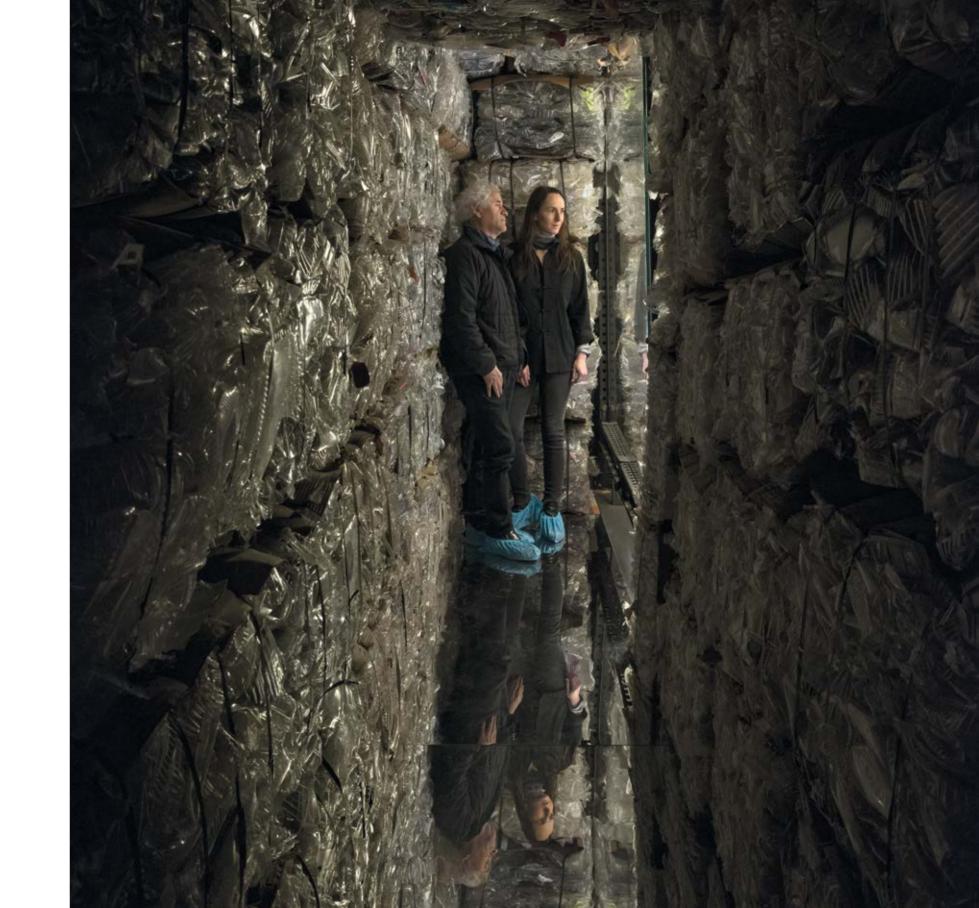
All of this listening to the stunning environment and marvelous sound of the sound of the chant of the whales.

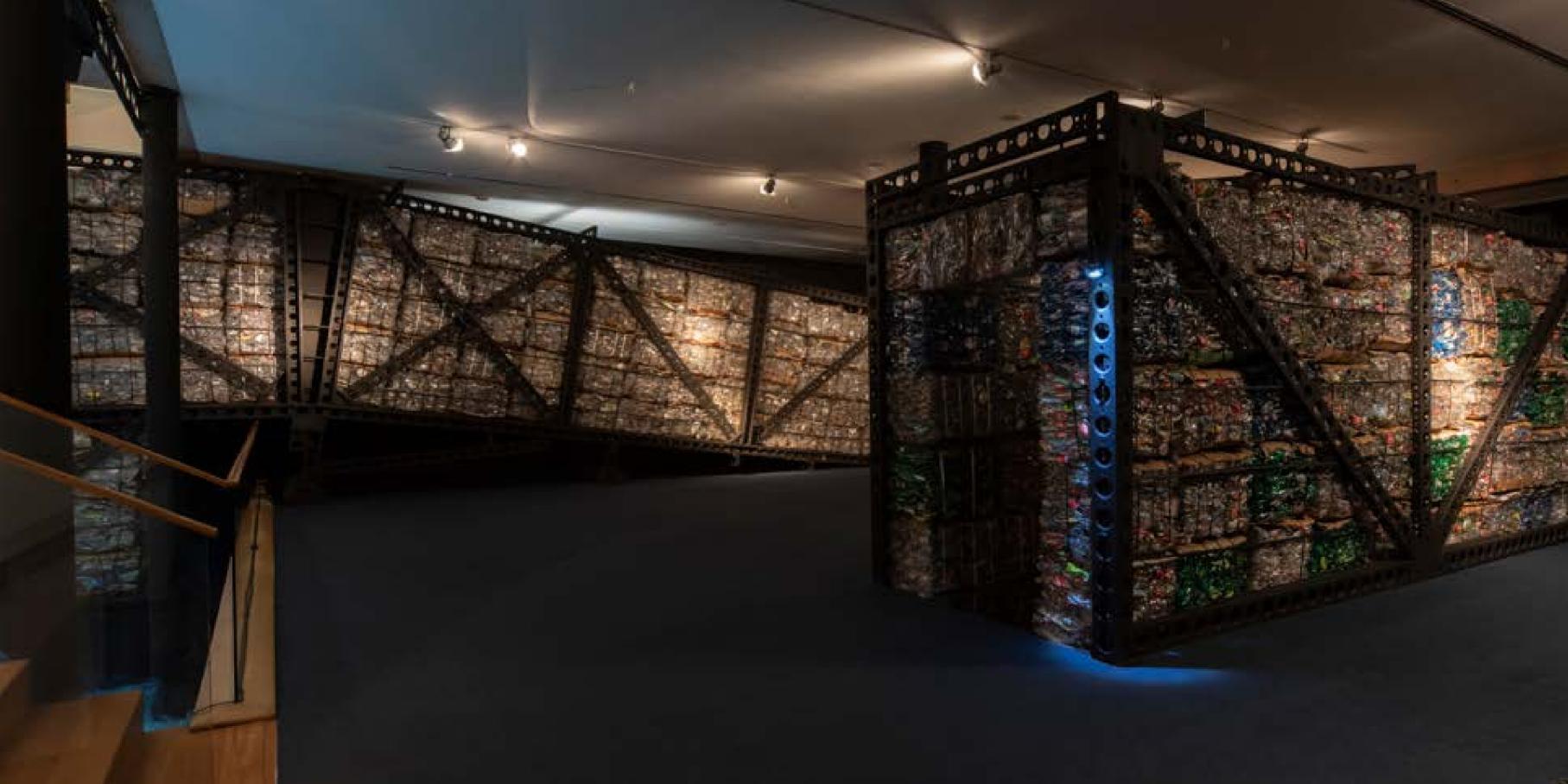
This installation, site-specific, has to be felt, experienced, looked at, with just one person entering at the time, in order to isolate oneself in the silence of the architecture, composed by the bails of residue as a deterrent of any noise, in order for the sound of the whales to dialogue with the inner-self of each human being.

This installation provides awareness and educates with information regarding the oceans, their contamination due to plastic residues and the growing threat that this means.

I hope that this project will be a small contribution to encourage awareness regarding damage that human activity can do to our planet - or habitat - and create a consciousness regarding the need to avoid it and look for solutions...now !!!

Denise Lira-Ratinof







The big industry is filling our planet with plastic, material of very low degradation, that mostly ends up in the ocean, which contaminates the water and affects in the life of that environment, from microscopic beings to large mammals such as whales and with that our whole ecosystem, meaning the planet that we inhabit, apart from being threatening due to climate change and deforestation, also originating from industrial activity.

Chronometer is an installation that intends to contribute making the danger that threatens us visible, helping consciousness about the need to decrease the production and use of disposable plastic and caring for our oceans, so important to bio-diversity and ecological balance.

An important factor is time, since the industrial production os plastic has rapidly grown, along with the daily use of containers, bags and other articles.

For this reason, it is essential to raise awareness to producers and consumers of the damage that we do to our planet and the need to reverse this process looking for solutions that will protect our flora and fauna, our natural resources and the environment in which we live.

The time is now!

And, do you know how plastic affects the planet?

Denise





EXPLORING THE EXTREMES

The artist's work adapts itself in regards to what each one of us knows but somehow avoids the distressing destruction of nature that man generates and specifically of the oceans.

By means of a vigorous and dramatic production, Lira immerses us into an asphyxiating laby-rinth that feigns the lack of oxygen and locks us into the ocean of plastic.

Built with obsessive precision, the project recreates the artist's force, who is able to convey her unease and her anxiety stemming from the evidence of the environmental disaster only through her photography and her installation.

The sounds of the whales resembling even human moans enforce the upsetting content and sometimes ambiguousness of the exhibit.

There is a combination between accusation and critical provocation where the artist conveys the intensity with which she has traveled through ice, sand and waters exploring the subjects of the cycles of life, in the staging of her grief in such a way, that she finally grants an aesthetic value both, to waste and to the revealed natural disaster.

This double interpretation expresses the ambiguity, where life's impulse is shown in order to give us an unforeseen beauty within the suffocating climate of the environmental disaster.

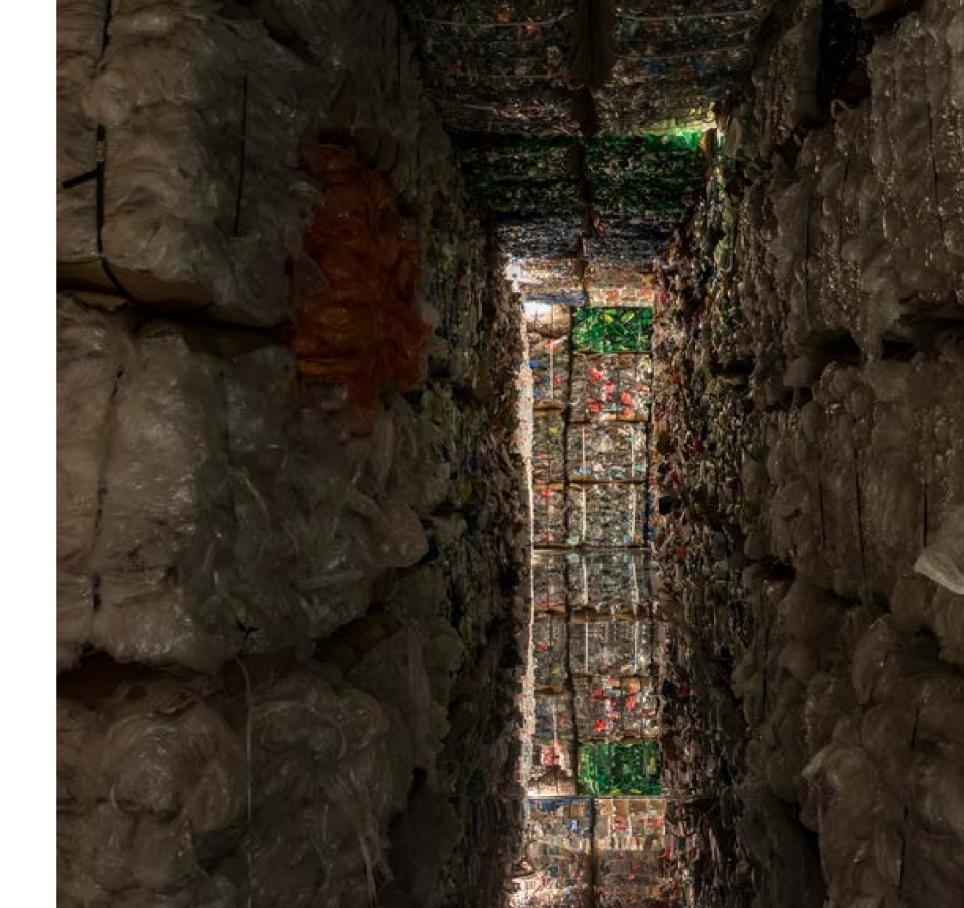
The polarity between the silent beauty of the untouched landscapes and the relentless bom-bardment of man towards nature are impeccably shown in this forceful installation.

This avid hunter, has recorded natural landscapes, going deep into inhospitable sites where survival becomes fraught with difficulties for the human being, exploring its own extremes.

Maybe this is what we can explore as a subtext in each one of her works, that present them-selves as a grand work in progress. Lira, as a great survivor, again and again, chooses life to have a dramatic turn, without any concessions for her or the public.

Behind her tireless work there seems to be an urgency for not waiting a minute of her life in this planet.

María Irene Alcalde MAVI Curator





THE STROKE OF THE SENSATIONS

The depth of Denise Lira-Ratinoff, beyond her seas, waters and oceans reflecting through her multidisciplinary eye, invites us to be alerts, in wakefulness, in reflection, in pause and traveling snd allows the possibility of fulfilling multiple introspections simultaneously as we walk through her labyrinths where images that become a system of symbols appear and it is clear as well as making us aware of the space of our Habitat.

CHRONOMETER Denise's most recent installation located in a large MAVI (Museum of Visual Arts) space, introducing us to a trip of sensations planned by the artist, where 1200 bails of waste thrown to the ocean will have a key role in this sensory trip, and the spectator will have to be fully aware of the multiple elements, each one locked into a gesture that amalgamates all of our senses.

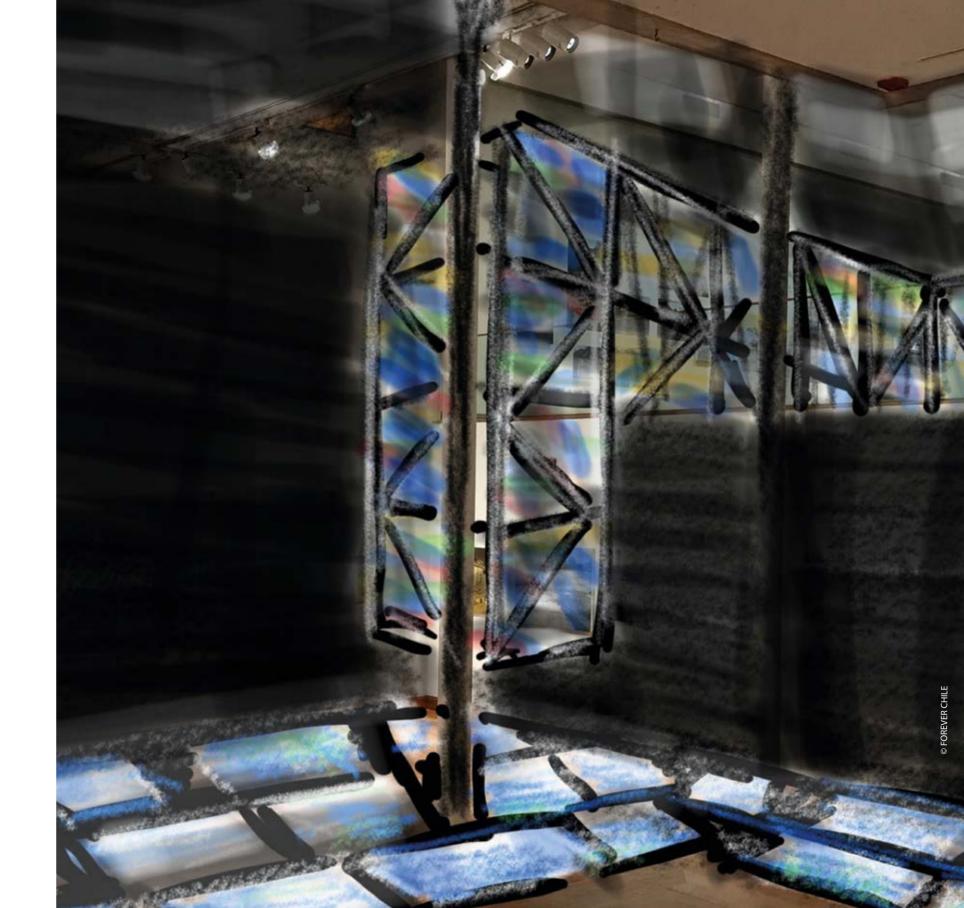
Walking through this infinite labyrinth, calmly, not knowing where we are or what we will encounter, will force us in a tacit way to focus our reflection on the artist's work.

It is very feasible for our sensations to become pleasure, sadness, vertigo, pain, disgust, desire and I will include the wish to abandon the labyrinth. The saturation of the elements that go on stage along with the sounds and noises true to our nature also invite in a secretive way to end this enormous expedition that has spaces of intermittent visual breaks where the most important and fundamental part is to understand how time goes by not allowing us for any respite. It is now and not tomorrow.

Denise Lira-Ratinoff already has a vast trajectory of works and large format installations in Chile as well as in the United States and Europe.

The connective thread presenter as the fundamental axis in this last work, in a way are the bails, where the meaning is clearly the reverse and invites the spectator literally to be submerged in her experience. The similarity with previous works and to a large scale is without a doubt the selection of the elements that compose this and other works, the waste, the recycling, the vital elements, the ecosystem, the nature that finally are the components of a battery of concepts that make this exhibit a great aesthetic presentation and as a result a vast discourse of Contemporary Art.

José Manuel Belmar One Moment Art, Director







TO KNOW IN ORDER TO PROTECT

Nature is a web of life and can not be studied by independent areas. Geology, Botany, Physiology, Zoology, among many other disciplines are necessary, to understand that our planet is alive.

And its millenarian language shows it.

What does it mean for me to have chosen Marine Biology?

A sound judgement.

I enjoy the good fortune of practicing the career I chose and showing people the thousands of ways that we have as human beings to go back to what we once were: beings that co-habitate an exuberant planet; not passengers of a train while we can close a window to everything that is happening outdoors.

Specializing in research aspects associated with contamination linked to plastic cognizant of how fragile the structure is. My studies in Chemistry, Biology and Economy, the various expeditions, the community work and the collaborative projects, have allowed me to understand the relationship that as human beings we have with our home.

At the same time, I have been able to combine a scientific career to other disciplines that are not related to this subject. This is what is so interesting, to be able to make science and its tools available to social, economic and cultural issues.

Nevertheless, there are no books or information any better than observation.

I have been able to observe the efforts that other human beings make in trying to bear the dramatic rhythms of the present contamination. I have seen its techniques, mechanisms and capacities in numerous latitudes and landscapes and fortunately, I have chosen to learn from nature.

In this manner humility is in me and allows me to continue the path of uniting human beings with what www have always bee: nature.

Our planet is alive

All of us are nature. The fluids transport and supply. AN example of this is our human body. A mirror of the great landscapes.

Our veins and arteries are very similar, in their form and function of rivers.

They transport nutrients and oxygen that nourish our cavities and organs, in the same manner that rivers transport nutrients and organisms to the ocean.

The rivers are the veins and the arteries of the planet, When the flow stops in our arteries and veins, malfunctions occur in other places and our balance is rapidly affected, just as in the flow of great rivers around the world stop, the water dams up and the sediments and nutrients do not reach the salty waters of the seas, creating an imbalance in the ecosystem.

Plants create shadows and protect from the sun and they even work as a shelter. Our hair also protects us from the sun and the cold. A shelter for our skin.

The planet and the universe are in perfect harmony, just like each ecosystem in the planet, each one of our organs is designed for specific functions that interconnect with the rest of our body.



Nature, more than a mechanical system, is a dynamic system

Our planet is a lie being that can breathe, self-regulate, communicate and open means of escape from its center.

Since the beginning of the 20th century the "Tectonic of the plates" has been discussed as theory. Relating al geological phenomenons among themselves considers the seismic and volcanic activity as central characters.

Huge underground connections house masses of magma that want to escape from the center of the planet through the volcanoes...

Terrestrial volcanoes and volcanoes that are even underwater. Without considering its location, they serve in the same manner as a means of escape for a magma that in contact with the surface is already known as volcanic lava.

And sometimes interconnected, the movements of the Earth - tremors, earthquakes - take place in the volcanic activities, in places

where the expansion of the Earth's crust is active, like in the dorsal and oceanic rifts, the areas of subduction.

The great chains of continental collision and "The Fire Belt", one of the most known zones. The great tectonic activity that has been with us before Pangea, shows us one more time that the planet is alive and informs us daily. And the volcanoes and Earth movements are a constant reminder of its regulation.

Everything that has been mentioned here is to help measure the large size and antiquity of the intimate and perfect bark of our planet Earth.

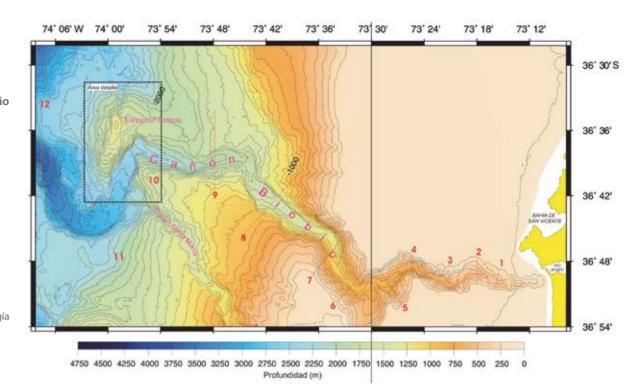
At present we see that the landscapes scream profoundly. The ecosystems dare to adapt as fast as possible. Each human being alive is resilient when faced with new contaminations and difficult threats that must be overcome daily with the help of its abilities and experience, much greater than that of the human being. There is greater wisdom, nevertheless the speed of adaptability is not that fast. Their efforts are being surpassed.



Map of batimetric measurements of the submarine canyon Biobio

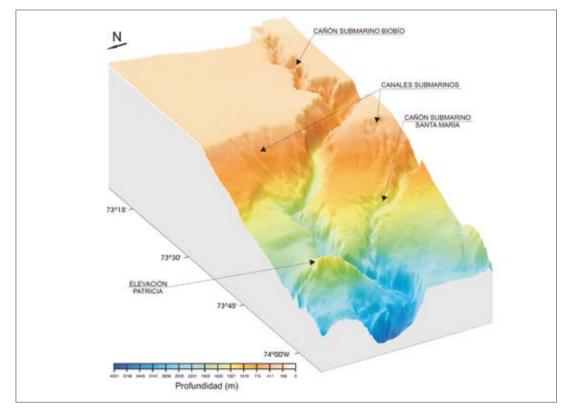
Batimetric measurements: a line that unites points of equal depth. Submarine canyon: prolongation of a bed of a river below the bottom of the sea.

Díaz-Naveas, J. & J.
Frutos (eds). 2010.
Geología Marina de Chile.
Comité Oceanográfico
Nacional de Chile Pontificia Universidad
Católica de Valparaíso Servicio Nacional de Geología
y Minería de Chile. 115 pp.



Model 3D with lighting effect of the Blobio submarine canyon. View from the Northeast with an elevation of 40°.

Díaz-Naveas, J. & J.
Frutos (eds). 2010.
Geología Marina de Chile.
Comité Oceanográfico
Nacional de Chile Pontificia Universidad
Católica de Valparaíso Servicio Nacional de Geología
y Minería de Chile. 115 pp.





Communication

The marine mammals often live for decades, some for more than 100 years. They are a part of one of the most diverse groups of marine fauna and they have magnificent adaptability that allows them to spend all or a great part of their lives in the ocean.

This megafauna has had a leading role in persecutions and commercial exploitation with the objective of increasing the value of their meat, bones and fat, among others. For several decades in many countries, their commercial hunting has been prohibited, nevertheless there are some that at present, have not adhered to this type of protection measures.

Besides, this group of animals has been a present witness of how their tranquility has been interrupted due to the severe acoustic interruption of the human being. Marine trafficking, explosives, active sonars, tourism and oil extraction are just a few of the causes of major interferences regarding the communication and the orientation of marine species. Adding as well an increase in artifacts and lasting materials that do not belong to the ecosystems. Known worldwide are the cases of different species of marine mammals that have been beached in multiple beaches where they had never been seen, all the product of the submarine acoustic pollution. Known are also the instances where whales filled with marine waste on their inside have been found, making clear the amount of waste that the ocean and its beings receive.

What do the species feel with all the challenges that they have to face daily?

How is their minute to minute?

If they could speak our language, for certain they would ask "What were you thinking of?

They do not have a voice or a language that human beings can interpret easily. It is possible that they have been trying for decades to make us react.

A way of reversing the situation is to change the focus

There are more types of pollution than ecosystems in the world. And reversing the tired screaming of the planet depends on individuals that are group acts born within the human being, from all of us.

If starting now we assume that "what is outside" is also "inside ourselves" it would be an honest way of becoming a part of the fragile network of organisms and ecosystems. We are all capable of exiting the train that I mentioned in the beginning and discover as we exit, that we are really going in. As a Marine Biologist, I have learned more upon observing nature than I have working with mathematical and bio-economic models.

All the answers are available if we take the time and with humility learn about our body and those of the rest of human beings, including our planet Earth.

Camila Ahrendt

Marine Biologist.

Plastic pollution specialist.

Scientific Director Plastic Oceans Chile.







ANIMALS IN DANGER AND SUBMARINE GEOLOGY

As a part of CHRONOMETER, three dimensional figures of animals that are in danger, according to the Red Cross list of threatened species of the International Union for Conservation of Nature (UCN). These figures were done from a 3D impression based on plastic recycled filaments (ABS types of electronic residues).

Just as the plastic bales (solid residues) utilized in the exhibit, this material goes back to a recycling process, with the purpose of re-entering it to the production chain and give it continuos and successive uses.

The represented species are:

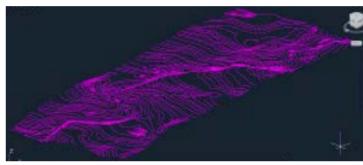
- Jurel (Trachurus murphyi): Low present level of biomass.
- BBlue whale (Balaenoptera musculus): In danger of extinction.
- Humbolt Penguin (Spheniscus humboldti): Vulnerable.
- Dumb Turtle (Caretta caretta): In critical danger.
- Chilean Flamingo (Phoenicopterus chilensis): Almost threatened





A representation of the submarine canyon of the Biobio will also be exhibited, which extends the length of the river of the same name in the bottom of the sea, in order to appreciate part of the geology of the Chilean sea.

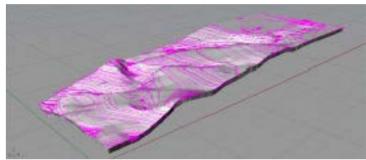
Starting with geographic representations curves of relief were generated and later a model was configured for the 3D impression, technology with which a three dimensional figure was made of this great canyon, also using recycled plastic.



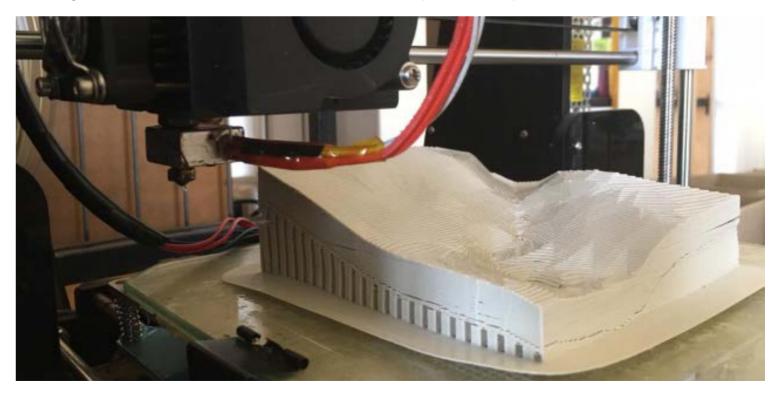
2. Group of relief curves that were processed in the software of Autocad 3D to serve as a basis to generate the model.

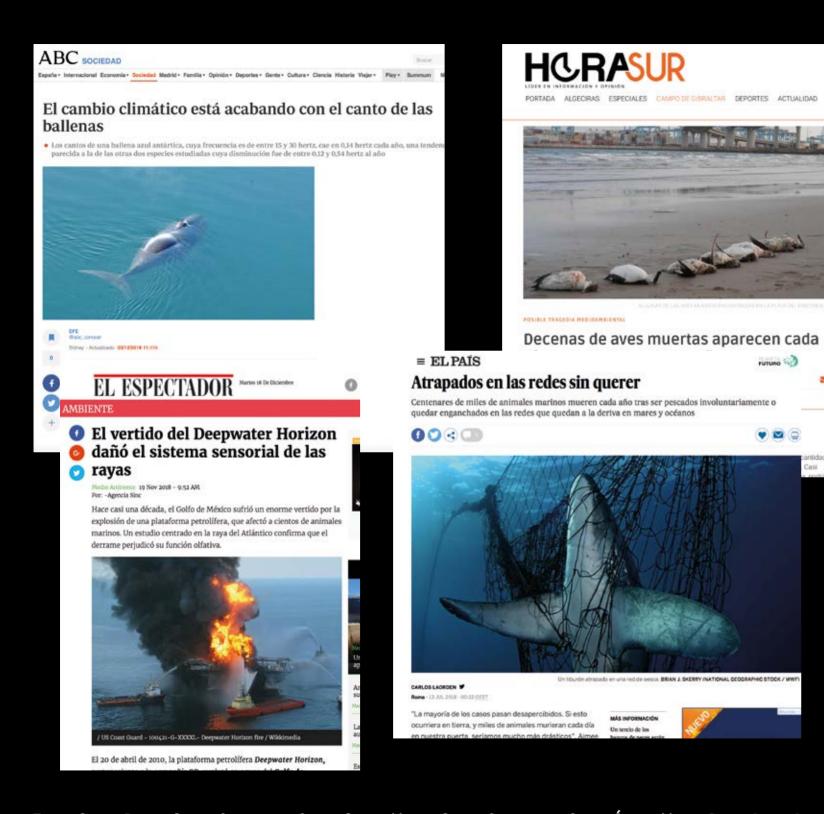


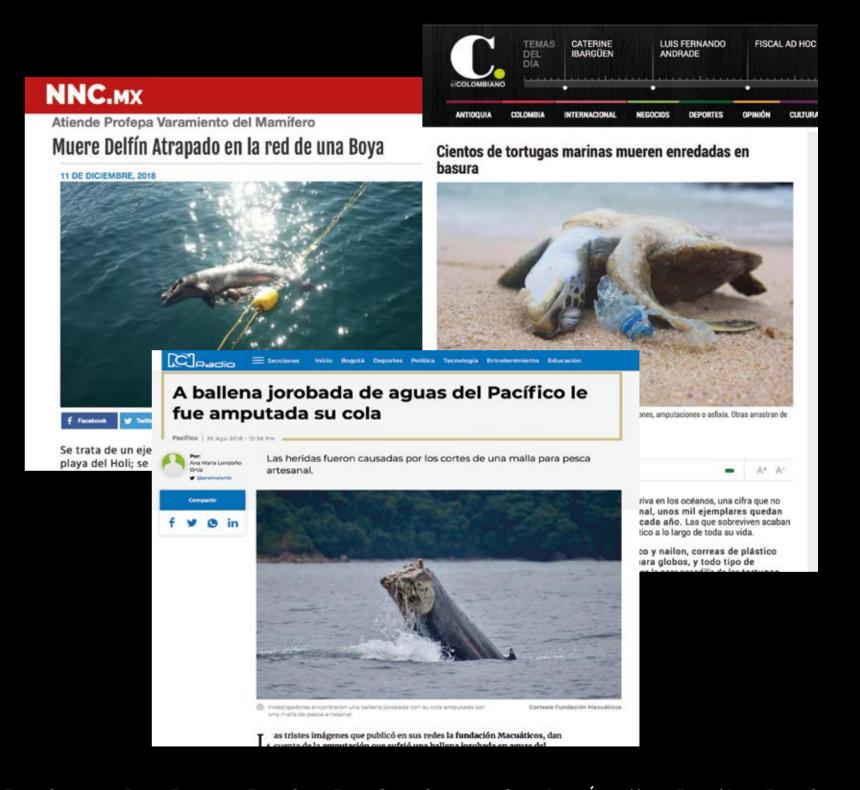
1. Oceanic basin of the mouth of the Biobio river, seen from Google Earth, utilized to get the relief curves with which the 3D model was generated.



3.3D model of the basin, done with Rhinoceros software through the generation of tangible surfaces to the group of relief curves of the basin.







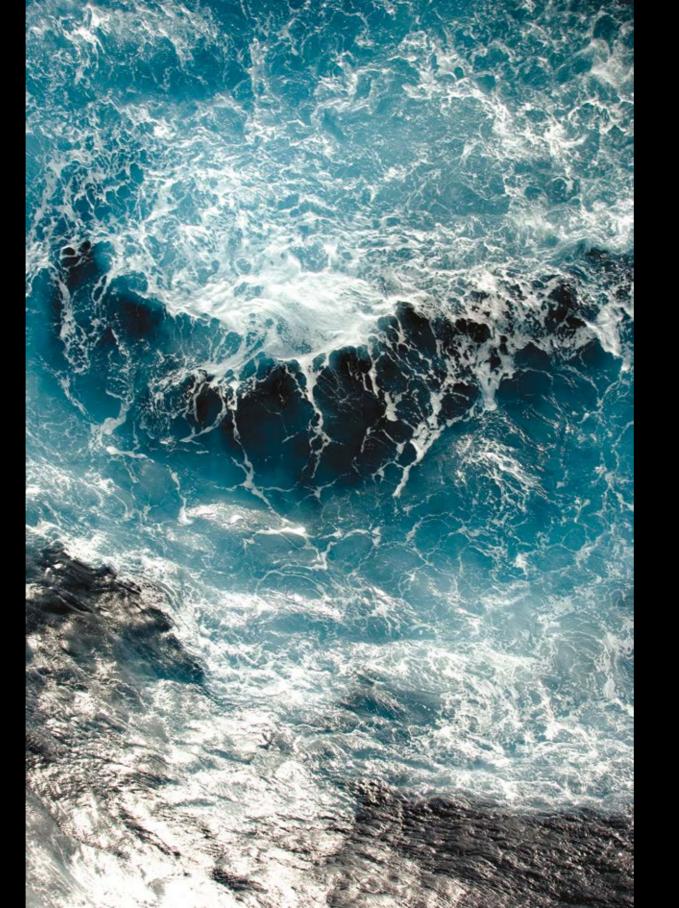


Between 4 and 12 million tons of plastic arrive annually to the ocean.

But where does the plastic pollution come from?

- The 20 main countries that deposit plastic into the ocean are responsible for 83% of the bad management regarding world's waste. The ones that stand out are China, Indonesia, Philippines, Vietnam, Sri Lanka, Egypt, Thailand, South Africa, Brazil, and the United States.
- By far, Asia (China specifically) has the largest production of plastic and simultaneously the greatest deficiency regarding waste and contribution to the ocean's pollution.
- As a group, the 23 countries with coastlines that form the European Union are number 18 on the list previously mentioned.
- The USA, China and the EU produce 2/3 of the world plastic.
- In Latin America, the daily production of waste is abundant and the management of these residues is practically null. Guyana is the country with the largest production of daily waste (1.53 Kgs./day/inhabitant), Chile following (1.25), while Argentina produces 0.94, amounting to a lower 24.8%

Camila Ahrendt Scientific Director Plastic Oceans Chile



Japan captures between 200 and 1,200 whales annually, which usually end up in the restaurant menu.

In the Faroe Islands hunting is allowed, mainly the pilot whale or long-finned pilot whale.

Norway, Iceland, Japan and the Faroe Islands still indiscriminately hunt marine mammals.

Japan announces in 2018 that it withdraws from the International Whaling Commission (IWC).

Tokyo indicated that it will leave the International Whaling Commission (IWC) and will intensify the "commercial" persecution of whales.

Macabre massacres in Faroe Islands, where they kill and torture pilot whales.

The meat of marine mammals contains heavy metals and other types of contaminants, harmful to the health of the human being.

Annually the sea literally colors red after the massacre following the capture of marine mammals in the northern hemisphere.

Having marine mammals in captivity is highly damaging to these species and their ecosystems.

The lives of marine mammals are impoverished by captivity.

Annually, hunters of marine mammals wait at certain beaches where different species reside or migrate, to hunt them and take them to entertainment centers such as Sea World.

The entertainment parks where marine mammals are being held in captivity claim to have a conservation purpose, twisting the truth.

Daily marine mammals travel great distances in search for food, in captivity they experience atrophy of many of their natural behaviors and are denied the conditions that allow the expression of their language.

Stress, ulcers, restlessness, self-mutilation and atypical aggression within groups frequently occur in captivity.

Natural behaviors, such as mating and maternal care, are altered by captivity.

With any exhibition of marine mammals, the needs of the visiting public are placed before the needs of the animals.

The enclosures are designed to leave the animals easily visible, but not to keep them comfortable.

Captive mammals have their movement space greatly reduced, having access to less than one ten thousandth of the space of their normal habitat.

Seeing captive animals gives the public a false idea of what the natural life of animals is like. The intensity of noise in the ocean has doubled every 10 years, to the point of severely damaging the health of marine animals.

Sonars, oil extraction, tourism, mines, torpedoes and bombs are considered the most powerful sources of anthropogenic noise in the sea.

For decades, for underwater explosions routinely about 4,600 kg (four and a half tons) of explosives have been used

So powerful are the sounds of tactical sonars of low and medium frequency, that whole groups of whales and dolphins have beached in a massive way.

To locate oil in the ocean, powerful acoustic pulses are emitted (all the time, every 10 to 60 seconds of interval).

Under water, vision is not the most important sense. Hearing is.

The received sound pressure, the repetition and duration of the noises will indicate the degree of damage in the marine species.

In the last ten years we have made more plastic than in the previous century.

Currently half of plastic production is being used for the manufacture of disposable products.

An average of 8 million tons of plastic enters marine ecosystems every year.

The largest amount of plastic entering the ocean (80%) comes from coastal edges and rivers

Microplastics are poisonous pills that have different associated contaminants

Among the main problems associated with larger plastics include obstruction of the digestive system, entanglements, false satiety and death

The microplastics cause interruption of reproductive, metabolic, growth and even failures in renal and hepatic functions as the most recurrent

70% of the surface of the Earth is water and the ocean contains more than 90% of the total of this resource

The plastic is currently found from the poles to the equator, reaching coastal areas, ocean floors, remote islands

About 4% of the oil is used for the manufacture of plastic

Microplastics or micro-beads of polyethylene and polypropylene present in facial scrubs, creams and toothpastes also arrive to the ocean

Lang and Galloway began to associate diseases to the heart, diabetes and hormonal alterations with the exhibition of additives common in the human being





BREATHE

Denise Lira-Ratinoff: How does the planet breath?

Nicole Ellena: The Planet is a living organism and the Gaia theory helps us in understanding such affirmation. This explains how the Planet self-regulates in order to maintain its balance through geological, chemical and ecological processes, based on the independence that the ecosystems and organisms have. A great example is in the forests, both on the soil and the sea, since they are to a large extent, responsible in lending ideal conditions for life's subsistence.

One of the ways in which the forests balance the atmosphere is thru the breathing that they self-perform. The trees absorb light as well as CO2 from the atmosphere liberating in exchange oxygen (in a process called photosynthesis). All live organisms in our planet depend on these cycles to be able to breath, feed themselves and reproduce.

But not only the trees perform this task: the ocean does it as well through phytoplankton and marine plants that perform a regulating function in our atmosphere, and therefore, help us stabilize the planet's climate and life such as we know it.

If we could count and visualize all these organisms that work daily for the planet, we would be talking about a breathtaking planetary system - a large green machine - in charge of absorbing the enormous amounts of carbon dioxide from our atmosphere, to deposit it later underground and finally liberate oxygen.

In spite of the large self-regulation capacity that the planet has (thanks to these organisms) the CO2 concentrations in our atmosphere keep increasing due to anthropogenic causes - produced by our species - . We have arrived at a critical standpoint where we have modified the carbon cycle to such a level that we have overheated the planet, and in this manner, this great organism called Earth is losing, in this same moment, its capacity to regulate itself.

Camila Ahrendt: Our survival depends on a narrow relationship with planet Earth. The line that connects the perfect balance of each ecosystem is so fine, that the pressure generated by the human being regarding the Ecosystems is resenting the balance in a worrisome way.

Our planet has had very significant changes for millions of years, nevertheless not at such a rapid rate like what it is experiencing today, a product of the presence and pressure of the human being.

Among these experienced changes, it is appropriate to highlight the succession of different continents. Rodinia, Pannonia and Pangaea have been described as three super continents that have existed in the planet. One at a time, they were witnesses of the evolution and self-regulation of the Earth.

In the past a large layer covered our Earth...In those years, the planet should have been called "Water", since it mostly looked like a planet of deep blues, with just one continent called Pangaea.

Pangaea was the last great continent that existed 300 million years ago and the land frontiers united in all directions towards an extensive ocean called Panthalassa, just like in an island.

Later, as a product of huge geological events, the super large continent started to fragment... Huge land pieces were separated, that at the same time, created different oceans. This event since 1912 has been known as "The theory of Continental Drift".

This is the reason why all the oceans and the present ecosystems, owe its balance to millions of years of an adjusted evolution and a self-regulating that propels the maximum efficiency to human beings...Millions of years of evolution have allowed us to enjoy the planet the way we know it.

It is time to know, so that we can protect.



D. L-R: What is the relevance of Phytoplankton?

N.E: Phytoplankton is a collection of microorganisms - bacterias and algae - with the capacity of creating photosynthesis and that inhabits the seas, the rivers and the lakes in the planet. Phytoplankton presents a great diversity and there are several species, such as: diatoms, dinoflagelated cya-nophyts and cocolythophoric dull brown algae, among others.

These serve as food for other animals, since they are the first organisms of the food chain of the oceans, feeding the zooplankton and other small species in the sea. If the phytoplankton did not exist, there would be no fish and our oceans would not have the great biodiversity that supports the diet of millions of people.

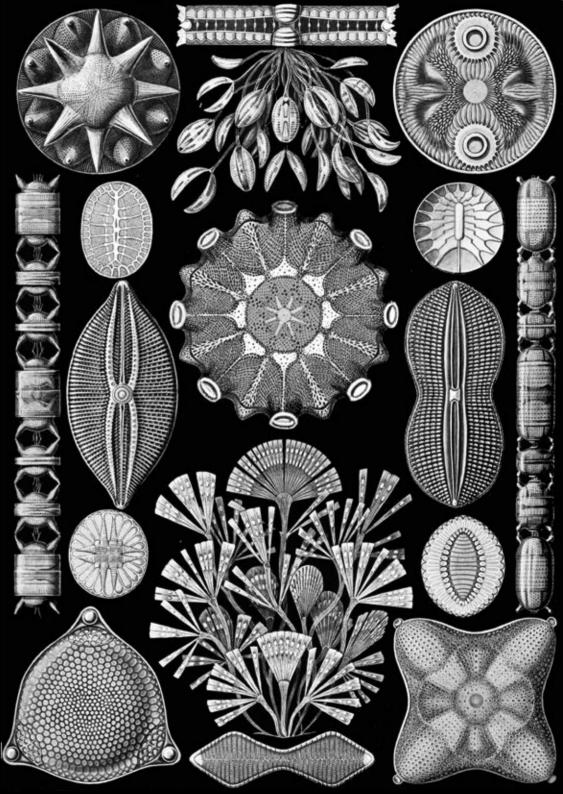
The plankton represents the forest in the ocean, that - along with the algae and chorals - ,are responsible for capturing between 30% to 50% of the $\rm CO_2$ from our atmosphere. For this reason the oceans have an effect on the weather by capturing and keeping the carbondioxide.

Nevertheless, the oceans can loose (and they have) their capacity to absorb the ${\rm CO_2}$ when atmospheric conditions change. Climate change happens when there is a dangerous build-up of ${\rm CO_2}$ in the atmosphere, attributed for the most part, to the burning of fossil fuels.

At the same time, the more temperate oceans liberate more ${\rm CO}_2$ than it was thought of, since in heating, the carbon reserves stored in the bottom of the oceans return to the surface and later to the atmosphere, enlarging the greenhouse effect and in this manner heating the planet even more.

Scientists estimate that the global population of phytoplankton has dropped by 40% since 1950, due to the increase of superficial marine temperatures. It is for this reason that keeping the planet's temperature below 1,5 degrees since pre-industrial times is fundamental to protect what we have left of life in this planet, where phytoplankton plays a significant rol in maintaining this balance.





Diatomeas, drawings of Ernst Haeckel, Kunstformen der Natur (1904).

D.L-R: How does trash reach the ocean?

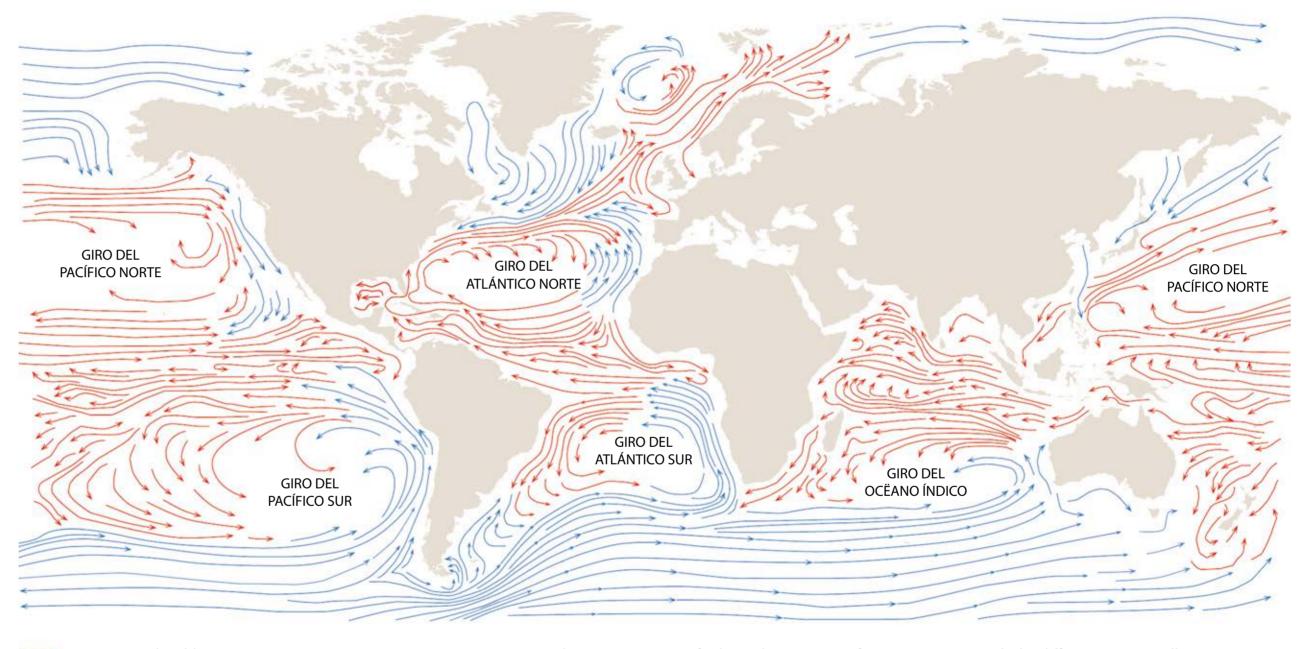
C.A: Mainly the trash that gets to the ocean comes from the continents. Different registries and scientific data have even determined that approximately 80% comes from terrestrial sources such as garbage dumps, rivers, melt-waters, tourism and economic activity associated to coastal banks. The rest (20%) has an origin in activities developed in open waters and oceans, such as maritime transportation, deep sea fishing, industry associated to the removal of marine products, recreational cruses and even oil platforms at sea level.

This is why as Nicole states, change starts with us, the one to one. It is important to start now. If 80% of the waste comes from terrestrial sources... It is evident that we are the ones behind it. It clarifies the path to know how we must continue from this day forward. We can not do it tomorrow. We must change our habits today. And I invite you to be a part of this.

D.L-R: Camila, could you explain how this plastic waste affects the movement of the masses of water?

C.A: Once that the waste goes into the ocean it is slowly collected by the water masses that travel through the ocean. 11 oceanic turns around the planet accumulate in a natural manner everything that is floating. Nevertheless, only five are the best known. Being the largest, they accumulate proportionally the largest quantities of waste in their centers.

Known as "plastic islands" it is worth mentioning that more than an island as such, what is found in the oceanic turns are not really "islands" as such. The common idea makes you think that there are extensions of kilometers of waste floating in the middle of the ocean, over which one could walk. Nevertheless, these areas characterize by having a different composition. Only in certain sites can you observe huge build-ups tangles with trash floating, the rest is water with millions of tiny particles of plastic that have been breaking into small pieces and are always available to the fauna that runs around them to be ingested. No matter what the landscape is, the truth is that all of this advances in an equal direction, affecting the natural cycles.



Currents with cold temperatures

Currents with warm temperatures

The oceanic currents facilitate the transport of marine waste towards the different oceanic collection points.

© Víctor Vergara for *Revista Endémico* magazine.. www.endemico.org



D.L-R: With regard to the noise in the ocean how could you define what happens to the animals specifically to cetaceans? Can you include the anthropogenic pressure that it generates to the various ecosystems, - effects -.

C.A: Nevertheless, plastic is not the only type of contamination in which the human being is involved. There are other types of contamination that are not easily visible, like plastic is.

One hundred years ago, the ocean had no interferences, nevertheless, since then the intensity of the sound of its waters has doubled every 10 years to the point of severely damaging marine animal's health, for which the sense of hearing is by far the most important. Is this known? Is enough known? When they talk to us about contamination in the ocean... we can not imagine that one of the most awful types of contamination for fauna is acoustic contamination.

Explosives, oceanographic experiments, marine traffic, geophysical research, underwater constructions, the use of active sonars, tourism, gas explorations, oil pumping (that emits potent acoustical pulses all the time, with 10 to 60 seconds intervals), wharf installations, bridges and wired turbines, are only a few of the activities that produce

sounds of low, medium and high frequency that affect every living creature that inhabits the oceans. All this is part of the most powerful noises in the seas. And they are invisible to the human eye.

The noise generates a huge wave of impact. This wave of impact is the one that causes most of the damage to the marine animals organs. Serious wounds, multi-organic and cerebral hemorrhages that lead to death and besides to massive beachings. Another consequence is the temporary or permanent loss of hearing, generating disorientation, change of habitat and changes in the feeding behavior, reproduction, raising, communication and navigation. And given the fragility of the marine fauna, the sound waves received, the repetition and the duration of the sounds mark the degree of damage in them.

I wish to reiterate that one of the disadvantages of this type of contamination, is that human beings can not see it at plain sight, different from the plastic waste or crude oil as an example. A world beyond what human being can see does exist and it does have direct repercussions in the fragile ocean's framework.

Let us protect what we are not able to see, but that we do have access to understand.



D.L-R: What could each one of us do if we wish to initiate the care of our planet?

N.E: There are different ways of getting involved. especially today, with all the access that we have to information. There are also multiple ways to contribute, but I do believe that it must start with oneself. This has to do with our daily habits, since - according to various researchers - we are living in the Anthropocentric era, a new geological period characterized by the huge impact that human beings have had at a planetary level.

In order to reduce our impact as individuals we must start with change in our diets: consuming little - or no - beef; only seafood caught with traditional methods - or avoid them -; and local and seasonal products. It is also necessary for us to be in charge of our waste, avoiding the consumption of plastic and disposable products as well as composting the organic ones in our homes. Finally, it is essential to become consumers and demand that changes be made starting with products produced in a conscious and responsible manner. These are only some of the steps that are available to us in order to reduce our impact as individuals and species.

Even if some may think that the individual action will not generate big changes at a planetary level, there are theories and historical events

that can back the idea that the changes almost started at home, by a small group of individuals. Later, what happens is that these ideas start replicating in social circles, until little by little permeate and become established in our cultures.

Besides, there are any amount of non-profit organizations today and social movements focused on environmental issues. The majority are driven by individuals that are passionate about what they do, but do not need more people to support the work they do. This has achieved big changes at the countries level and globally, stimulated by individuals who believe in the collective work without expecting any retribution, other than the protection of our ecosystems and its inhabitants.

Finally, we must demand - as active and mobilized citizens - for governments to adopt urgent measures, to reduce the damage that we have caused to this great Earth system, since our own survival depends on it.

Nicole Ellena, Director Endémico Magazine

Camila Ahrendt, Scientific Director
Plastic Oceans Chile.

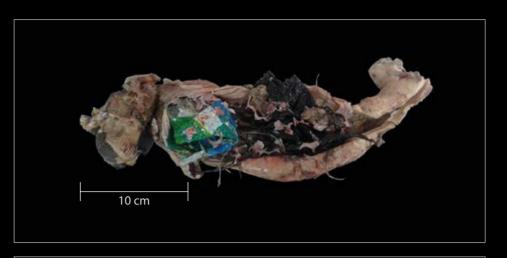
Denise Lira-Ratinoff, Multimedia Artist



Plastics found in the stomach of Sun Fish (*Lampris guttatus*)

Incidence of plastic marine fauna found in Chilean maritime territory, analyzed by CIMARQ.

© Camila Ahrendt

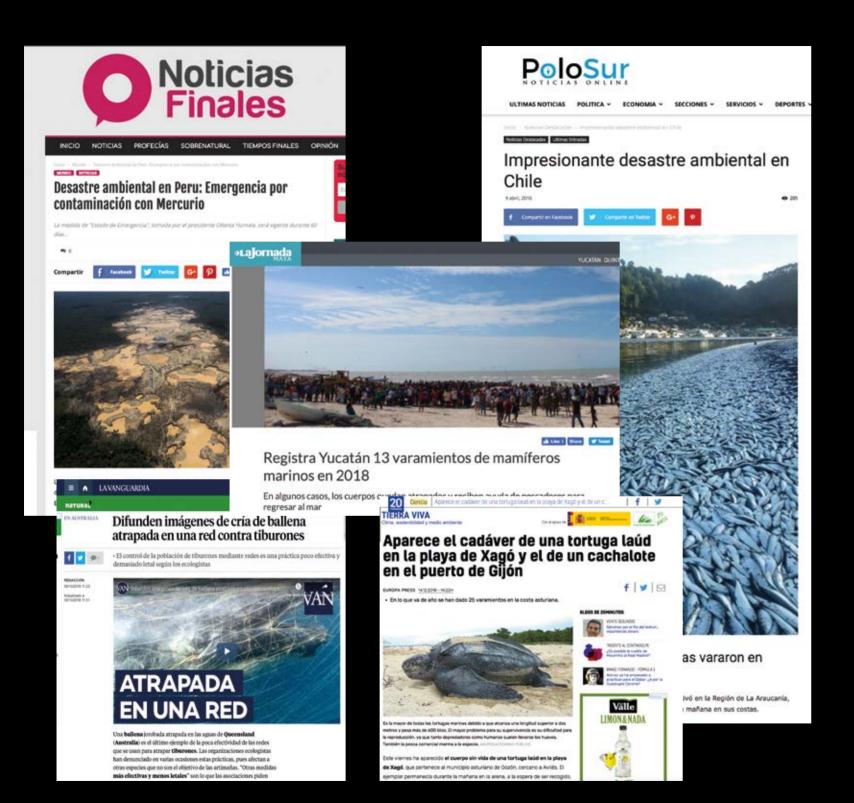


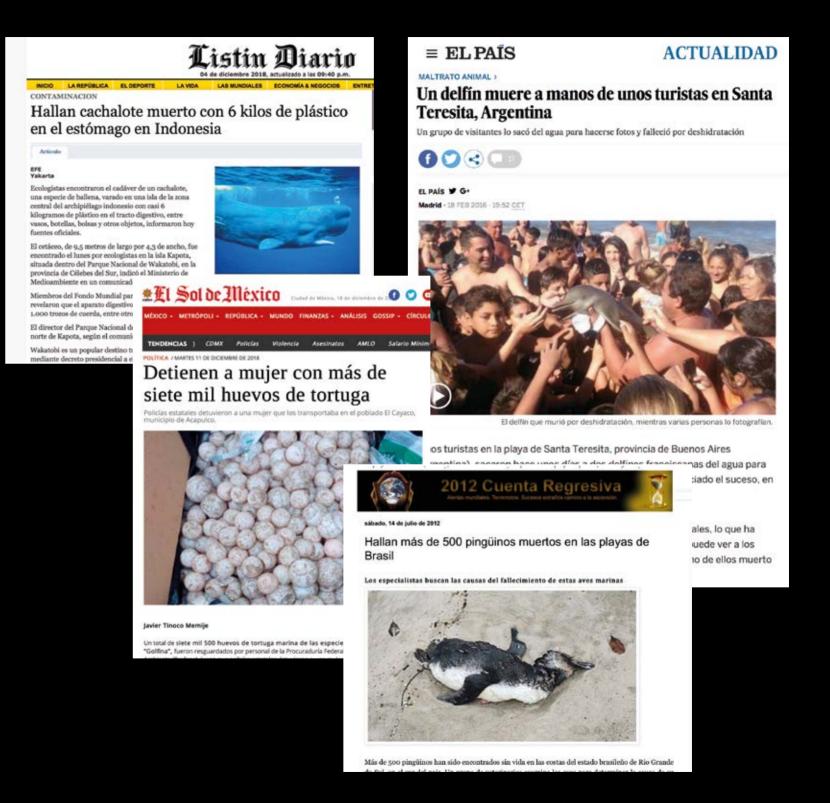


- Plastic bags of Asian origin
- Black plastic bags
- Fibers of different types of plastic









ODOS SOMOS CÓMPLICES DE ESTOS CRÍMENE



DEVASTATION

Why do the ears of the stranded cetaceans bleed?

Why do they become disoriented?

Do they commit suicide?

Is the food chain at present a massive poisoning?

So many of the questions are forgotten or hidden, that the responsibility of this installation is to make visible what is invisible through the sound impact provoked by the various noises in the ocean.

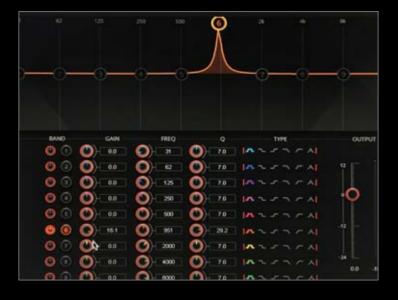
It is our responsibility to alert one another.

Adaptation is the essence of survival.

The intuitive adaptation makes a species more vulnerable.

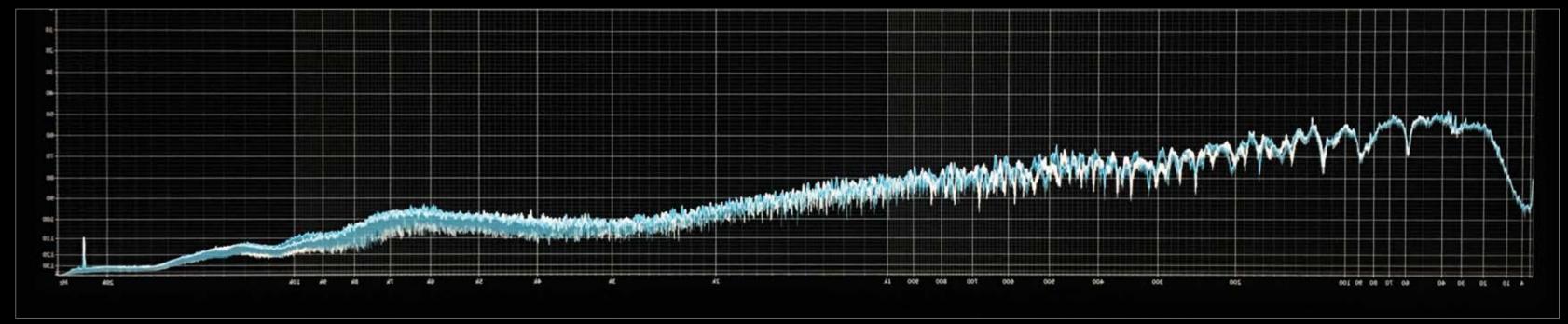
The hearing is the entrance to the soul of a whale.

D. L-R.



Images of analysis of spectrums of frequency and spectrograms of whales chants









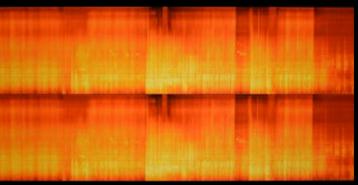
RESOUNDING FREQUENCIES

To project, Design, Coordinate, Conceive, Elect and Organize a series of armed sounds with the purpose of conveying an idea, to make a virtual space credible and transmit certain sensations to the spectator of an audiovisual product is the vibrational law of the universe, facing instances that make us live, love, travel, laugh, hate, get depressed and be touched until our souls have tears.

In the same manner as there is light in photography, which is frequent, sound is similar and projects the same feelings in our senses. In the same manner as autistic children travel on the back of a horse, because there is a certain sound in them that makes them feel fulfilled and happy, to be close to a cetacean and for it to give you infinite emotion are frequencies that vibrate, travel and penetrate our soul.

From the physics of a musical sound (for example the Indian zither makes strings vibrate, and in its inferior layer there are other strings that float and vibrate by themselves, just for sympathy) to the simple feelings of seeing, smelling, feeling, touching, falling in love...those are frequencies that traverse our body in order to reach our souls.

Christian Cosgrove A.Sound Engineer, Yagan Films

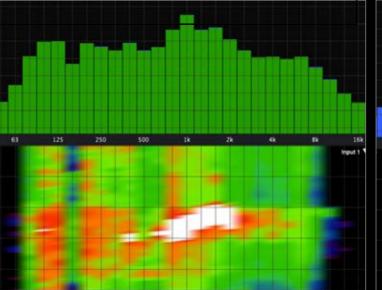


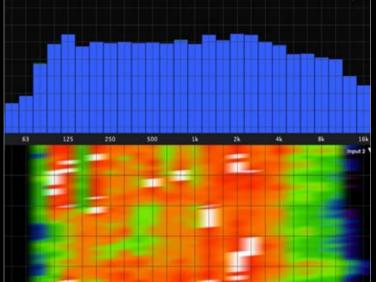
Spectrograms of the chant of a hump back whale.

Charming Resonance. All vibrations of certain intensity entail a resonance of sensations and common humors; they stir in a way, the memory. It does something to us to remind us and make us conscious of similar states and their origin. In this manner rapid habitual associations of feelings and thoughts take place which finally with the speed of light, they are not even perceived as a complex, but as unities.

Friedrich Nietzsche *Human, too human*

Spectrograms of the chant of a hump back whale (Video Movement I, 2018)







THE LEGACY

Everywhere in the world there are voices that are extinguished daily.

When a person dies, their departure rapidly becomes news that has emotional repercussions to those who were close, other times the departure has dimensions that measure the level of importance the person had.

When hundreds of cetaceans die aground in the harbor, it just becomes news disguised as a natural enigma, as if human beings were not responsible for their lifestyle, with the cult towards what is disposable and for the unmeasurable ambition of becoming rich.

Listening attentively to the beautiful and upsetting voices having a dialogue among the large cetaceans, I feel a manifestation of the magic of that immense creation, of the creation exempt of religions or philosophical beliefs, yet at the same time I can not stop thinking of the cruel legacy of the human race.

Standing next to the ocean I think of how we, as humanity, are dumping into it a totally uncertain destiny close to making it barren and condemned for ever to the silence of its magnificent inhabitants.

We get ready to represent the ocean for its painful complaint.

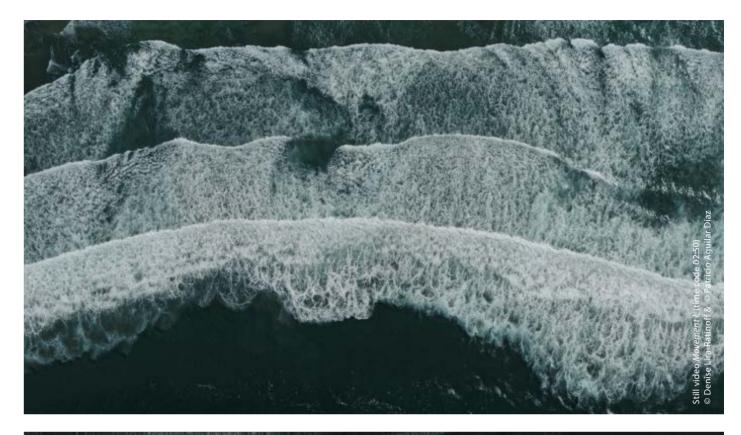
We decide to cry out for justice for the horrible damage that the noises of industrial activities provoke in their highly sensitive audition.

We want for this artistic exhibit to make visible the departure of these animals drowned in plastic who disoriented keep running, leaving blood steles that come out of their ears, bursting due to the explosions searching for oil.

If we keep thinking that this is a future problem and that someone is going to come and fix it for us, we simply do not realize that it will be us the ones that will be running away.

Patricio Aguilar Díaz Production Designer and Director/ Special Effects Supervisor for Cinema (SFX)

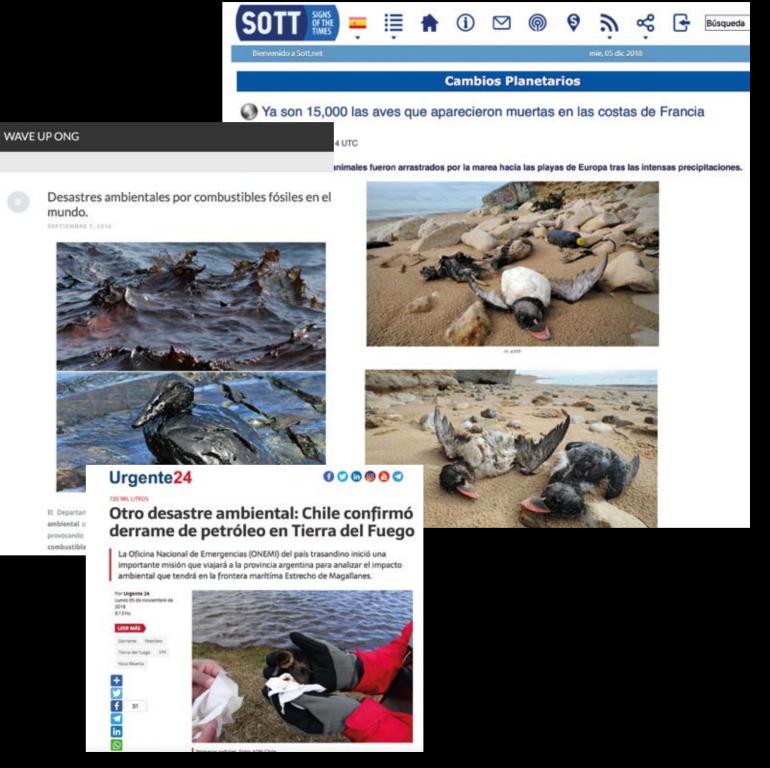












ODOS SOMOS CÓMPLICES DE ESTOS CRÍMENE

TRASH IS A DESIGN ERROR

In the course of history, art has been one of the most relevant vehicles for the human being to create culture, generate consciousness and activate the changes that remain in time. This is the reason why Denise's work with Chronometer covers enormous relevance not only in the importance of calling attention regarding the subject of plastic waste in the oceans; but more importantly in achieving at an individual's level his daily connection as a consumer, with the impact that we generate in these fascinating, respectable, magical and necessary giants, such as whales, the glaciers and the great masses of water that give life to the seas.

In TriCycles we are proud to work with Denise contributing with our art in the making of the labyrinth of contamination to which we have entered as mankind and to which we have pulled hundreds of thousands of species. In our belief that "Trash is an Error Design", we are aware that the realization is maybe the first step to exit gracefully our self-imposed trap.

Gonzalo Muñoz TriCiclos



UNDERSEA NOISE

There is a progressive worsening in the last decades of the level of underwater noise, mainly of anthropogenic level.

To the sound of natural disasters (crunches and breaks of sea ice, eruptions of underwater volcanoes, lightning, earthquakes, storms, typhoons) we can add the one generated by human activity (navigation and sea transportation, oil and gas exploitation, scientific research, use of sonars).

These artificial sounds cover a large gamut of frequencies, from 1 to thousands of Hz, that sometimes generate acoustic waves of huge intensity, considering that water is a highly efficient means to transmit sound, provoking a level of noise in the submarine world that can be up to 100.000 times higher than the one of the engine of a jet plane.

This is how an intense acoustic contamination has taken place in the oceans, where the sound level is twice of what human beings can bear regarding pain. This has strong effects in marine animals, generating physical stress, changes in their behavior, hearing loss (the most important organ in the species of marine mammals) and irreversible organic damages. This includes death in cetaceans, turtles, fish and invertebrates.

(Information obtained from Internet)



Emotions



CHRONOMETER Experience

September 6th, thru 9th., 2018

- I felt identified "The love and the labyrinth of the Faun" Congratulations.
- VERTIGO R. Cabezas
- As the song goes "To float is to fall" Super experience, to jump into one's intimate vacuum...Congratulations.
- IMMERSED, SUBMERGED, DIAMETRICALLY SQUASHED WITH SLIPPERS,
- LOVELY EXPERIENCE // THANK YOU VERY MUCH.
- Striking to be submerged in the quiet breathlessness of the aquatic world.
- Thank you for showing this to people. Thank you. Excellent.
- You outdid yourself, it has more impact than anything that I have seen lately, a truly marvelous way of representing the pollution in the planet.
- The work is truly impressive, a feeling of choking until you get to light with the precious photograph and I was truly impressed with the chant of suffocation from the whale.
 Kisses, Juanita
- It was fascinating, aromatic distressing towards the end, the montage was spectacular, resonant. Mega congrats.
 Ramona
- Kyrah (7) happiness, it was beautiful
- Noah (13) pretty amazing, a lot of effort
- Ehlan (10) recycle, it avoids pollution
- Mykah (9) weird, little bit scared
- Papa Gaston (41) how impressive !!!!!
- Gonzalo (40) surprising and intense !!!!!
- Christian (39) Reality, no more plastic!

- Tragedy transformed into beauty.
- A harrowing experience to the point of tears.
 Jose Tijoux
- A HARD-HITTING EXPERIENCE, I LEFT Shaking.
 @ras_silva
- Incredible! It made my stomach tight.
 Congratulations.
- Congratulations dear Denise, the ocean's pollution is a great subject, a complete feeling, vertigo, mystery, the planet's consciousness is screaming. A very good installation.
 Sergio A.
- A little bit of fear on the ground, but one has to recycle almost always, so it is very telling. One must not pollute the ocean.
 I was surprised and enjoyed the sound of the ocean. Recycled walls and things can be recycled.
 Alicia (5 1/2 years old).
- When one does not coexist on a daily basis with reality, it is difficult to assimilate what exists, happens or affects. The sound of an animal whose natural habitat is the ocean, the place where all of our waste goes, it is not fair that they can not defend themselves or defend their space. It touches me to feel that this is in our hands and yet we do nothing. Thank you for being a means of communication for creatures who can not defend themselves. Pia Leiva
- Incredible. An infinite journey regarding every day occurrences.
 GC.
- You outdid yourself! Too good!
 MC

- Thank you for making us more aware that contamination is not only in garbage dumps, but up and down, shinning on us. Being mirrors of our unconscious, of what we wish to hide.
- Thank you very much. Fran V.
- Too good, so current and limitless, vivid regarding the space relating to pollution to its consequences. Thank you
- I felt that we were lacking consciousness/ we are doing a lot of harm to our environment.
 Luis Sergio
- I felt short of breath and it did make me feel genuine panic. Incredible !!!!!
- Congratulations !!!!! You really created an experience where no one can remain different..... a perfect match with us !!!!! Hugs, Mark Plastic Oceans
- You genuinely took me towards what one feels if one is in a plastic ocean.
- Thank you for generating this experience that for sure will reach many people.
 You are the best Denise !Vivi Plastic Oceans
- A very strange experience happens, a feeling of special peace, a desire to contemplate silence. I loved it!
 Daniel Ferreira
- Infinity summons in all the senses.
- My favorite part. Visually and the way you feel internally...super creative!
 Hello, Madi
- I felt like I was inside a Time Machine.
- Stunning!!!
- A lot of vertigo, strong Recycling, Another level, Great artist.

- An experience...to remember, I could even hear the beats of my heart.
 Congratulations!
- Touching experience, no words, eloquence and reflection. Thank you for the installation.
- One can feel the dirtiness and the cleanliness of man's footprints without shame of destruction, without realizing, without feeling the pulse of what is transcendental... Life's Ocean Christian Montabone
- Definitively....a proud experience.
- Absolutely effective in regards to immersion. Congratulations !!!!!

 Juan Ferrer
- It makes my heart beat.
- NOW! There is still time, keep running.....
- I give thanks for the silence. Constanza Fernandez
- WATER IS LIFE !!!!! To calm, to care in order to generate consciousness.....
 Perception comes when there is calm and the senses transport you to the momentum.....your message transcends space time, since it is something that happens in the present past future and yet, the consciousness of many remains asleep. Thank you for making art work a facilitating tool for reflections.
- ...silence...l think...l am ashamed...l think...You clicked my conscience, you transferred whatever so daily unit to volume, the dimension. One bottle + one bottle + one packaging + 1 bottle + one packaging.....etc., etc., l thank you. Constanza Almazan C.

- MY FAVORITE Very well achieved. Great presentation and lighting. Very Good.
- It would be nice if the voyage would be longer. Congratulations !!!
- 11:06:33 according to the chronometer /WOW! Delighted. With admiration for your work.
- A light of poetic hope and aesthetics from the plastic to our egocentric bones.
 Merca. Thank you.
 Pamela. Circus Artist.
- OVERFLOWING IMPACT CONTEMPLATION PLENITUD EXPERIENCE SILENCE DEPTH
- The problem is not the plastic, it is us destroying nature and ourselves.
- Art Science Technology make the visible the invisible, it develops all the senses and makes the whales scream: feel touched with my pain, we are disappearing. Thank you Denise and Pato for unveiling reality through art.
- I find it important that the immersive experience is at eye level with the subject. Thank you very much!
- Horrible to realize how much we discard in plastic, no doubt it is hard-hitting.
 Strange and impressive. It frightens me to know that we are digging a grave that will be covered by toxic residues.
 Julie M.
- Incredible, it leaves you without words.
 I was anguished by the scream of the whales. It seemed like they were being extinguished by the suffocation of the plastic. Incredible.
- I SUBMERGE, IT ENVELOPS ME (OR) I SINK...PACKAGING IS SUBMERGED, IT MAKES NO SENSE. WE MUST BOUNCE BACK.

- I felt like in a dream, an exquisite vertigo. Victor
- Fabulous experience! Impressive work!
 It creates an ecological conscience in us.
 Congratulations.
 MB & MA
- Outstanding way of conveying that the choking due to pollution creates and is transferred to the spectator. Congratulations.
- Thank you, a highly impressive level of energy that calms. Sacred frequencies, the meaning is so well achieved.
 D.J. Haiti
- My dear Denise, what an experience
 !!!!! We are all responsible and making
 it evident is a responsibility for all of us.
 Thank you for life.
- You must reveal to Time Ended.
- Great! The space is so well used and the proposal really achieves its objective. As a matter of fact, I even had vertigo with the ground and the noise that whales made. Thank you!
 Camila Puertas
- Congratulations, very well achieved.
- TO listen in silence.
 Salvador Muzzo
- TO A BETTER WORLD. Thank you for having an impact in my senses in regards to the insensitivity that we are having on earth, utilizing plastic and throwing it all to the marine world, without thinking that defenseless creatures die because of us. Your exhibit calls for an immediate change in the use if materials and their recycling. Applause for fighting for a better world. Elisabeth Dulanto
- The amount of plastic! How terrible! Excellent work!!!

- An incredible experience. Short but so precise in conveying the idea and creating consciousness.
- It is like being in another place, dreaming, one feels total peace, very relaxing.
 Martina
- I congratulate you for the great experience that you gave to us today, it is a fact that we must become conscious now...
 Hernan Rosselot
- A high impact project, with great meaning / it is a work with - sense.
- The experience is a combination of fascination, amazement, vertigo and fear when we submerge ourselves in this plastic environment. It is is interesting that there is an intimate encounter that happens as you go in, especially because the path is an invitation to reflect how society and ourselves forget the damage that we are causing.

 Claudio Mendoza
- We only have one planet, it belongs to us and the next generations. Today for you and tomorrow for you. Love your world. Rosa Alcoba
- A very good experience to create consciousness that we are exterminating the planet in a geometrical form.
- To reverse this situation is to raise awareness for the generations to come.
 RAD
- It was a unique experience. I found it shocking to see all the plastic together and the effect it had on the floor makes it even more impressive. I would have loved to have had my friends with me, in order for them to understand what is happening in our planet. Julieta A.

- Spectacular, to be able to build with recyclable. Congratulations.
- Very good work, both in its form and content. Congratulations!
- You outdid yourself !!! We must continue to draw attention !!! I congratulate you! Hugs, C.E.
- Highly emotional, the choking followed by the consciousness. A thousand congrats.
- CON CIOUSNESS
- To walk along day by day and not dare to go to the crux of the matter.
- I felt that I was in Japan, MONO HA (1969) Movement. The intervention of the space with 1 object to change mentalities and in this manner the course of what we expect should be reversed.
 Nicole Mordant Rafa and Victoria Morales
- Great fear about the world ending in this manner, as if I were to be trapped in plastic.
- I congratulate you fro giving some consciousness to the planet.

 Marcela
- How terrible, how frightening, thank you for giving with the purpose of creating consciousness. Regards, Edson
- I congratulate you, everything is so beautiful, I loved the idea to influence through art, it is a great idea to change the mentality of the people in our society. To combine the sound of the whales, makes you think of the trash that you throw away and that it will damage other beings.

 Gonzalo Aguilar

- I loved this creation, since it is highly impressive how it makes you reflect about what makes you throw in the trash and the influence that this has in the planet. It would be great if more people could see your work and reflect on it. Ignacio Aguilar
- + ICE PLASTIC
- It is key to visualize the impacts, to feel the chocking and the urgency in order to change what we can in a visible future.
 Congratulations and keep up the good work!
- Coherent integration between the different dimensions, risky endeavor.
 Congratulations !!!!!
- Excellent!
- It is like entering a catacomb, filled with death, ours.
 Gabriela Prat
- Incredible, ingenious, creative, it wont everyone's attention. Congratulations!
 Francisca Gongora
- I just wish to thank you with emotion and amazement for your proposal, reflection, work, commitment and sensitivity.
- For an instant I felt that I was inside of a whale. Thank you.
 Constanza Ragel.
- A journey thru the throat of humanity, by the stomach of who we are and what we have done. Thank you for being daring.
 Sergio Castro
- Recyclable. Great exhibit, makes you stop and realize we all need to do better. Eliminate plastic.
 Erich Saletin
- Anguish.

- Creative Consciousness Mauricio Lama
- Tremendous contribution to the politics, a work with a contemporary context in regards to our human commitment with art, an moving.
 Gabriela H.
- Painful and necessary. We need more of this, especially for the children.
 Catalina M.
- Thank you for this oceanic meeting.
 I allowed me to be in harmony and present with what is the most simple and sutil in life.
- It is interesting to remember that the time to change is now! Not for you or for me, but for life and for those who will live, even for the ones that are a part in a different way of existence.
 Isidore de la Maza
- It is incredible to reflect on what is shown today in the exhibit, we must become pro-active.
- It is wonderful to feel and be a part of the work. Congratulations.
 Fernando F.
- Congratulations on leading this battle, may it not be a battle.
- A voyage to the cold indifference of the world. Magnificent and chilling. Tremendous!
- The sound: a parallel with the interior sound that cries out for liberation of what seems indestructible. Later, in time, it will be the music of the earth's harmony that will travel day and night. Mario D'Ardaillon
- A necessary and indispensable reminder of the urgency of the challenges that the human race has in our only habitat.
 AR

- Conscience Touched.
- I went to an ugly but clean area.
 Thank you for showing such a raw reality but with a happy ending! Keep believing in this change, this revolution that is changing the world. Many congratulations.
- An incredible sensation surrounded by trash and the glacier ready to die.
- Space warped by reflections and sounds like burnt plastic!
- The question regarding the idea of "Nature", time passes as we intend to define it. To illuminate the problem could help in generating change.
- It was an experience that calls for a feeling of being trapped in trash.
- The whales; Goddess mother of our waters...navigates and draws in the ocean of the unknown...the abyss. How do we face this abyss? No doubt that Baudelaire with L'Homme et la Mer could give us a push...Feelings...many; a combination of gratitude towards the artist and the whale that hides in her work and disgusts towards my race, my people and my species that walk through this world with the arrogance of silence, believing that we are alone...
- Dimension of the amount of plastic as a whole, claustrophobic.
- A genuine submersion. A clear, direct message gets to its destiny. It is hard to define art, but it touches the soul and transmits a message, further more it generates changes, it is marvelous.
- An experience of immersion into the reality of how we try to get rid of the plastic that we consume, but relived from a different perspective that invites us to reflect. Thank you for this work.

- Claustrophobia, anguish, constant surprise, a very sensitive experience that transports you to an unknown new world. I loved it.
- Depth.
- It was an extraordinary job, since I
 have great respect for the sea. After all,
 out of all of humanity, we should be
 the ones to understand it. I truly felt
 sorrow towards the sea. I congratulate
 you. Lua (9 years old).
- A jewel, I truly loved feeling curiosity, fear and be charmed by the last message. A jewel !!! cuh cuh cuh (Vibration) - cuh - cuh (Variation) (Plastic crushing) smh smh uh uh uh (Pastic crushing) (Vibration).
- Simply Thank you! Many thanks for the work and invitation to such a relevant subject in such a powerful way.
- Surreal to think of being trapped in plastic. It calls for the urgency of acting immediately. Very good and educational.
- Coherent integration of the different dimensions, risky and sensitive work.
 Congratulations !!!!! IU
- Upon entering the cavern I felt that I
 was stepping on an abyss. A narrow
 and scary tunnel. I kept walking and
 in a cave I saw a light. At the end, an
 abstract photograph of a glacier, the
 head of a whale and in the air a call of
 another whale or the same one.
- PLASTIC IMPACT. Very well presented. The best.
- My gut succumbs in the face of the strong death rattle that calls for action, we will never be the same.

DENISE LIRA-RATINOFF

Born in Santiago, Chile. Studies in Chile and USA. Lives in Santiago and works between Chile, United States and Germany.

- Drawing / Printmaking / Painting
- Interventions
- Installations / Public Art
- Photography

Consejo Asesor The Nature Conservancy Embajadora Plastic Oceans Chile

ARTIST RESEARCH

| 2017-2018 | Currently researching on Science and Humanity through Art |
|-----------|---|
| 2012-2013 | Atacama, Expeditions, Chile |
| 2012-2013 | ALMA, Atacama Large Millimeter Array, Chile |
| 2013-2014 | Atacama Walks with Shepherds, Chile |
| 2009-2011 | Oceans, Expeditions, Worldwide |
| 2007-2008 | Glaciers, Expeditions, South America |
| 2001-2003 | Vineyards, Expeditions, Chile |

HONORS & AWARDS

- 2016 Nomination at the 10th Annual International Color Awards, with her photograph ALMA (The Atacama Large Millimeter Array), North of Chile. Worldwide
- 2015 Honorable Mention at the 9th International Award Honoring Color Photography, with her photograph Atacama Desert from the Trilogy Natural Cycles of Nature.
- 2011 Nomination at the 5th Annual Photography Master Cup, The International Award Honoring Color Photography, photograph Ice 24 from the series Glaciers, Worldwide
- 2008 Best Art Event of the Year, Critics' Picks, Creative Loafing, Atlanta, GA, USA
 - At First Sight II (video + sound and photography Installa-tion), Loading Dock, 1280 W Peachtree, Atlanta, GA, USA
- 2006 Purchase Award Darby Bank & Trust Company (Photography), Sayannah, GA, USA
- 2000 Commission for Chilean Government for a Monumental Installation, Santiago, Chile
- 1999 Awarded Best Young Artist, First Prize, XXI National Competition of Art, Chile
- 1998 Honorable Mention, XX National Competition of Art, Chile
- 1997 Honorable Mention, XIX National Competition of Art, Chile

SELECTED SOLO EXHIBITIONS

- 2019 CRONOMETRO (Site-Specific Art Installation), MAVI Museo de Artes Visuales, Santiago, Chile
- 2017 Breathe-Respirar (Photography Installation + Video + Sound). December, Galería Patricia Ready, Santiago, Chile Sand, Ice, Water (Photography Installation + Sound), from Breathe-Respirar. February, Zurich, Switzerland
- 2016 Sand, Ice, Water (Photography Installation), Quilvest Wealth Management, Santiago, Chile
- 2013 Oceans (Photography Installation), Plaza San Pedro de Atacama, World Water Day, North of Chile, Chile
- 2010 Art and Time I, At First Sight, Curator Mar Morosse (Multi-Channel Video + Sound and Photography), New York, USA
- 2008 Elements (Photography), Hagedorn Foundation Gallery, Atlanta, GA, USA
 At First Sight II (video + sound and photography Installation),
 Loading Dock, Atlanta, GA, USA
- 2006 At First Sight (Sound + Photography Installation), Galeria Patricia Ready, Santiago, Chile
- 2004 MoViendo (Photography Installation), Espacio Enrique Concha, Santiago, Chile
- 2002 Chepica Bermuda (Photography, Video + Sound and Nature Installation). Galeria Artco. Lima. Peru
- 2000 Nictagenia (Installation), Red House Museum (Museo Casa Colorada), Santiago, Chile

SELECTED ART FAIRS / FESTIVALS

- 2011 The Armory Show, New York, United States
 Galeria Isabel Aninat (Photography Installation)
- 2010 Pinta London, The Modern & Contemporary Latin American Art Show, London, UK
 - Galeria Isabel Aninat (Photography Installation)
- 2009 Pinta New York, The Modern & Contemporary Latin American Art Fair, New York, United States
 - Galeria Isabel Aninat (Photography Installation)
- 2008 4th SP-arte, International Art Fair, Sao Paulo, Brazil, Galeria Florencia Loewenthal (Photography Installation)

- 2006 FOTOAMERICA 2006, 2nd Festival of Photography, Galeria Patricia Ready, Santiago, Chile
 - At First Sight I (Sound + Photography Installation),
- 2005 ArteBa 2005 14tth Edition Contemporary Art Fair, Buenos Aires, Argentina (video + sound and photography Installation)
- 2002 III Bienal Iberoamericana de Lima, Peru, Galeria Artco, Chepica Bermuda (Photography, Video + Sound and Nature Installation)

SELECTED PUBLIC ART

- 2006 Vineyard (Multi-Channel Video + Sound and Photography), Memorial Health Hospital, Hoskins Biomedical Center. Savannah, GA, USA
 - Grass (Multi-Channel Video + Sound and Photography), Memorial Health Hospital, Savannah, GA, USA
 - Vineyard (Multi-Channel Video + Sound and Photography), Duggal Visual Solutions, New York, USA
- 2003 Vineyard (Multi-Channel Video + Sound Projection), LAN Chile, Music & Wine, Santiago, Chile
- 2000 Straw House. Monumental Public Installation in the middle of the Highway, Collaboration project with Chilean video artist Isabel Garcia. Santiago, Chile

PORTFOLIO REVIEW & VISITING ARTIST INVITATIONS

- 2017 Breathe-Respirar, Diary of a travel log around nature, Artist Talk, December, Galeria Patricia Ready, Santiago, Chile
 - La evolución histórica de la fotografía femenina como manifestación artística, invited by National Museum of Women in the Arts, UBS & Christie's. Santiago, Chile
 - Diary of an Ephemeral Road, Artist Talk, February, Zurich, Switzerland
- 2016 Diary of an Ephemeral Road, Exhibition & Artist Talk, Quilvest Wealth Management, Santiago, Chile
- 2013 Savannah College of Art & Design, Artist Talk & Portfolio Reviews, Silver & Ink Event, Savannah, GA, USA Aconcagua Summit 2013, Portillo, Chile
- 2008 Skorpios III, Artist Talk about the series Glaciers, South of Chile

SELECTED GROUP EXHIBITIONS

November 2018.

- 2018 Habitar. Instalación CRONOMETRO. Curators Montserrat Rojas Corradi, Mariagrazia Muscatello, Gerardo Chávez-Maza, One Moment Art en Triana Patrimonio Urbano, Santiago, Chile BALLENAS Voces del Mar de Chile (Group Exhibition, Photography Installation), Centro Cultural La Moneda, Santiago, Chile. August to
- 2017 Photography Museum NRW-Forum, Grieger Relaunch. Düsseldorf, Germany
 - Waves and Ripples, Enrique Rivera Curator. Jica Global Plaza, Tokyo, Japan
- 2010 Christie's Green Auction, A Bid to Save the Earth, Christie's New York. USA
- 2008 Waterscapes, Gallery Walk at Terminus, Marianne Lambert, Curator. Atlanta, GA, USA
- 2007 Route 68 Km 9 (Video Screening), High Museum of Art, Atlanta, GA, USASmall Works, Casa de Cultura, Alamos, Sonora, Mexico
 - Photographers Now, Musee de l'Elysee, Lausanne, Switzerland Photography Show, The Defoor Centre, Atlanta, GA, USA
- 2006 Incisiones, Museo de Artes Visuales MAVI, Santiago, Chile
- 2002 Foto Vision, Club Empresarial San Isidro, Lima, Peru
- 2000 Expecta 2000, Arturo Duclos, Curator. Galeria Animal, Santiago, Chile
 - Libros de Artistas Latinoamericanos, (LatinAmerican Book of Artists). Galeria Petroperu, Lima, Peru
- 1999 Laboratorio 8, Galeria Balmaceda 1215, Santiago, Chile Arte Joven (Young Art). National Museum David J. Guzman, San Salvador, El Salvador
- 1998 Bi Regional Exhibit, Museum Emiliano Guiñazu, Casa de Fader, Mendoza, Argentina
- 1997 Dialogos del Oficio, Galeria Luz y Oficio, Havana, Cuba

SELECTED PUBLICATIONS

- 2018 10 Años Galería Patricia Ready. Pags. 75-76, Chile. Ograma Impresores.
 - Ballenas Voces del Mar de Chile, pags. 24-25-124-125-136-137. ISBN 979-956-8529-56-7, Chile
- 2017 *Breathe-Respirar*, Photography Book by Denise Lira-Ratinoff and Galeria Patricia Ready.
 - sand ice water, Photography Book by Denise Lira-Ratinoff. Intellectual Property: 274.107
- 2014 100 Miradas al Arte Contemporáneo, Arte al Límite, pags. 90-91-92-93-94-95, Chile
- 2011 At first sight Denise Lira-Ratinoff, Arte Global Al Limite Magazine, March-April Issue 47, pgs. 108-115, Chile
- 2010 Pinta London 2010 The Modern & Contemporary Latin American Art Show, Catalogue, Galeria Isabel Aninat G-04 pgs. 28-29, UK Christie's Green Auction "A Bid to Save the Earth", Catalogue
 - Silent Auction Highlights, Lot # 200058, New York
- 2009 Pinta New York 2009, The Modern & Contemporary LA Fair, Catalogue, Galeria Isabel Aninat, pgs. 34-35, USA
 - A Visual Dialogue between Life & Death: Colectivo Aninat & Swinburn and Denise Lira-Ratinoff, Arte Global Al Limite Magazine, Nov-Dec Issue 39, pgs. 90-91, Chile
 - Feria Pinta 09, New York, Al Limite newspaper, nov. n#53 pg. 10, Santiago, Chile
- 2008 10 Years, Catalogue Galeria Balmaceda, pgs. 46-49, Santiago, Chile **16:03:27**, Photography Book by Denise Lira-Ratinoff. ISBN: 978-956-319-249-0. Publisher: Openmade, Chile
 - At First Sight II, Arte al Limite Magazine, March/April 2008, Issue 30, pgs. 74-75, Chile
 - At First Sight II, Photograph Magazine, March/April 2008, Vol 5 number 4, pg. 131, USA
- 2007 Silverworks 2007, Catalogue of honored works Photo-graphy Dept. Savannah College of Art and Design, GA, USA
- 2006 FOTOAMERICA 2006, 2nd Festival of Photography, Catalogue, ISBN: 956-7631-20-4, Santiago, Chile
 - At First Sight, Catalogue Solo Show, Galeria Patricia Ready, Santiago, Chile
- 2005 ArteBa 2005, 14tth Edition Contemporary Art Fair, Catalogue, E7 pg. 100, Buenos Aires, Argentina
- 2004 Cover Photograph, *Contacto*, Kodak Professional Magazine, Portfolio, October, Cono Sur, South America
- 2000 Daily Installations Cycle, Catalogue, Museo Casa Colorada, Santiago, Chile
 - Memories 01- 2000/2001, Catalogue, Galeria Animal, Santiago, Chile
 - Expecta 2000, Curated by Arturo Duclos, Catalogue, Galeria Animal, Santiago, Chile

- 1999 Laboratorio 8, Catalogue, Galeria Balmaceda 1215, Santiago, Chile
- 1995 *El Paraiso de mi Tierra* (The Paradise of My Land), Book, Denise Lira. ISBN: 95.094, Santiago, Chile

SELECTED BIBLIOGRAPHY

- 2019 García Huidobro, Sofía. Mi misión máxima y hasta mi muerte es el Océano. Review Capital Magazine. Cultura/Arte. January 18, 2019, pags. 86/89, Chile
 - Sommer, Waldemar. CRONOMETRO. Review El Mercurio Newspaper, Artes y Letras. January 13, 2019, pag. E6, Chile
 - Espinoza, Denisse. Denise Lira Retrata la contaminación de los Océanos en el MAVI. Review La Tercera Newspaper. Cultura. January 11, 2019, pag. 42, Chile
 - Montesinos, Elisa. 1200 Fardos de Plástico y un laberinto de arte. Review El Mercurio Newspaper, Vida Actual. January 5, 2019, pag. 4, Chile
 - Castillo, Rodrigo. Laberinto de basura submarina se instala en pleno barrio Lastarria. Review Las Últimas Noticias Newspaper. Cultura. January 3, 2019, pag. 38, Chile
 - Silva Astorga, Daniela. Denise Lira-Ratinoff, la artista que alerta sobre el mar contaminado. Review El Mercurio Newspaper, Cultura. January 2, 2019, pag. A8, Chile
 - Subercaseaux, Maria Gracia. CRONOMETRO. La Buena Vida. Radio Zero. January, 2019. Santiago, Chile
 - Figueroa, Daniela. CRONOMETRO. Radio Usach. January 7, 2019. Santiago, Chile
 - Guendelman, Rodrigo. CRONOMETRO. Santiago Adicto. January 2, 2019. Santiago, Chile
 - CHRONOMETER, An Installation by Denise Lira Ratinoff, ARTFORUM Magazine, United States
- 2018 Ortiz de Rozas, Marilú. Veinte artistas intervienen casas antiguas de Providencia. Review El Mercurio Newspaper. September 13, pag. A10, Chile
 - Silva Astorga, Daniela. El éxito de las Ballenas en el Centro Cultural La Moneda, Review El Mercurio Nespaper. September 8, pag. A13, Chile
- 2017 Sommer, Waldemar. Tres autoras en pleno estío santiaguino, Review El Mercurio Newspaper, Artes y Letras, January 8. Pag. E8, Chile
 - Ortiz de Rozas, Marilú. Denise Lira, la retratista de una naturaleza amenazada, Review, El Mercurio Newspaper, December 2. pag. A18. Chile
 - García-Huidobro, Soledad, Breathe-Respirar, Interview, MásDeco Magazine, La Tercera Newspaper, December 9, pag. 3-6, Chile Harper's Bazaar Magazine, December, pag. 70, Chile

- García, Gabriela, Oficina con Vista, Interview, Magazine YA, El Mercurio Newspaper, July. 11. pag. 20, Chile
- García-Huidobro, Soledad, Sobre la Piel de la Tierra, Interview, Magazine MásDeco, La Tercera Newspaper, May. 20. pag. 3-6, Chile Espinoza, Denisse, Denise Lira: la fotografía como travesía vital,
- Review, La Tercera Newspaper, April. 29. pag. 90-91, Chile
- Breathe-Respirar, Galeria Patricia Ready. Highlights Casas Magazine, pg. 16, Chile
- Ortiz de Rozas, Marilú. La Naturaleza Extrema que expone la artista Denise Lira, Review, El Mercurio Newspaper, Feb. 09. pag. A9, Chile Pernod, Nana. Atemberaubende chilenische Fotografie, Ensuite Magazine, Jan. Issue 169, Switzerland
- 2016 Mena, Catalina. Esto no es un Paisaje, Paula Magazine, Dec. Issue 1216, pags. 18-20, Chile
 - de la Sotta, Romina. 9th Annual International Color Awards, El Mercurio Newspaper, March 30, pag. A12, Chile
- 2011 Williams, Janaya. 2011 Armory Art Show Spotlights Latin American Art, March 3, wnyc.org
 - Wainwright, Jean. Armory Show 2011 Latin America Focus, March 3, The Art Newspaper Digital
 - The Armory Show puts its 'Focus' on Latin American art, March 2, MutualArt.com
 - Ortiz de Rozas, Marilú. The Armory Show, Denise Lira sigue su Trilogía, Review, El Mercurio Newspaper, March 1, Chile
- 2010 Muñoz Cisternas, Melody. Pinta Londres, ExpressNews, UK Lara, Carolina. Pinta Londres Globaliza el Arte Latinoamericano, El Mercurio, Cultura, pag. A21, Chile
 - Sales, Milena. A Bid to Save the Earth, Bora Magazine. Issue 28, Year # 7, pag 32, Chile
 - Telias, Raquel. Agua, Review, Magazine + Decoración, La Tercera Newspaper, March 27. Pag.13, Chile
- 2009 López, Macarena. Pinta se Consolida en NY, Review, + Decoración Magazine, Dec. 12/12. pags. 22-23, Chile
 - Ortiz de Rozas, Marilú. Feria de Arte Contemporáneo, Arte Latinoamericana al alza en New York, Review, El Mercurio Newspaper, Nov. 21. pag. A19, Chile
- 2008 Vitols, Valentina. Beyond Photo Elemental, Interview, ARTVOICES Magazine, Dec. Issue 10 pags. 37-38, USA
 - Michaud, Debbie. Best Of Atlanta 2008, Art Review and Year Selection, Creative Loafing, pags. 29-34, USA
 - Lester Travelino, Amanda. The Radar Design, Art Review, The Atlantan Magazine, August Issue, pags. 43-44, USA
 - Cullum, Jerry. Photos Capture Elemental Change, Art on the Edge in Atlanta, Art Review, VIZART AJC, June 26, USA
 - Hicks, Cinqué. Ice Castles, Art Review, Bare & Bitter Sleep, March 20, USA

- Bos, Monique. Lira-Ratinoff offers viewers "First Sight", Art Review, The Chronicle-ATL. Feb 29, USA
- Cabezon, Isidora. An eye for Simplicity, Interview, Arte Al Limite Magazine, January/February issue 29, Chile
- 2007 Arcos, Natalia. 21 Artists to Celebrate, Art Review, Arte Al Limite Magazine, Nov-Dec 2007, issue 28, Chile
- 2006 Fonseca, Mario. Discreciones, Art Review, El Mercurio, November 21, Chile
 - At First Sight I, Art Review, Bora Magazine, Dec-Jan 07 issue 12, Chile/Argentina
 - Murua, Macarena. Incisiones, Art Review, El Mercurio, March, Chile
- 2002 Arte para Videntes, Art Review Straw House, ARQ 50 Magazine, Architecture, Design and Urbanism, March, Chile
 - Olivares, Francisca. La Naturaleza es el soporte de mi trabajo, Interview, Cosas Magazine, #242, April 26, Peru

SELECTED MULTIMEDIA

- 2019 MOVIMIENTO I. Multimedia produced and directed by Denise Lira-Ratinoff & Patricio Aguilar Díaz. CRONOMETRO produced by FOREVER-CHILE
- 2018 BREATHE. Multimedia produced and directed by Riolab, Chile BREATHE-RESPIRAR. Testimonial produced by FOREVER-CHILE, Germany
 - Diary of a travel log around nature. Produced and Directed by Patricio Aquilar Díaz, Chile
- 2017 Sand Ice Water. Zurich, Switzerland. Multimedia produced by FOREVER-CHILE, Chile
- 2016 Making off Atacama Desert. Multimedia produced by FOREVER-CHILE, Chile
 - Ice 13 and Water 01 from the series Glaciers, SCAD Collection, presented by ABC and SONY Entertainment, USA
- 2015 Endless Poetry. Art Direction by Denise Lira-Ratinoff & Patricio Aguilar. Directed by Alejandro Jodorowsky. Chile

COLLECTIONS

- Museo Nacional de Bellas Artes, Santiago, Chile
- Museo de Artes Visuales, MAVI. Santiago, Chile
- Musee de l'Elysee. Lausanne, Switzerland
- Memorial Health Hospital. Savannah, GA, USA
- Eurocapital, Geneva, Switzerland
- MBA Lazard Bank. Buenos Aires, Argentina
- Darby Bank and Trust Company. Savannah, GA, USA
- Savannah College of Art and Design, Atlanta, GA, USA
- Universidad Finis Terrae. Santiago, Chile
- Universidad de Valparaiso. Valparaiso, Chile
- Private Collections in Europe, North and South America



© FOREVER CHILE

THANKFULLNES

Thanks to the love and unconditional support of Patricio Aguilar this project became a reality.

I thank my family for believing in my feelings.

Thank you Salvador Lira Cummins for teaching me so much about animals. I thank my Mother Denise Ratinoff for her support and for teaching me to follow my vocation.

Thank you Jose Manuel Belmar for the invitation to go on stage and above all for your trust since we met.

ITHANK the amazing team CHILOE CINE: Marcelo Burgos, Daniel Fuenzalida, Alonso Landaeta, Pedro Painen, Claudio Catalan, Jorge Diaz, Jaime Abarca y Julio Zenteno, for your team spirit since the beginning of the development of CHRONOMETER, without this great team dreams do not become a reality. Thank you Jonel Louis, Jeanty Leo, Emmanuel Felix for your generosity and efforts.

Thank you Cecilia Bravo Celedón, Maria Irene Alcalde and Ana Sanhueza for opening the doors to the Museum of Visual Arts, MAVI, to share and make the invisible visible through this installation that expresses a chant on the edge of silence.

Thank you Maria Elena and Jacobo Ratinoff for making my dream possible.

Thank you Andrea and Bill Byrd for translating each word with so much love. Thank you Gonzalo Muñoz Abogabir for straitening the world a little bit with each bail of solid waste that here at CHRONOMETER are a part of a work of art. Thank you Juan Cristobal Hurtado for feeling the respite of the ocean through the edition.

Thanks to the Meri Foundation, Francisca Cortes Solari, Ana Maria Molina, Sonia Español, Franco Mellado and Patricia Morales for transmitting through your research the pulse of the ocean.

Thank you Camila Ahrendt for your constant Consultancy in Marine Biology and mostly for teaching me to understand the diversity of life, geography and relevance of loving the ocean.

Thank you Mark Minneboo for struggling to care for and heal the earth's lung. Thank you Ricardo Aguilar for your advise and opinions in Engineering.

Thank you Carmen Romero and Francisco Reyes for your friendship and teachings.

Thank you Hernan Levy for your support in the production of the "Movement I" video for this monumental installation.

Thank you Pauline Kantor and Agustin Salas for your closeness and friendship in my gaze.

Thank you Guillermo Feuerhake for all the patience and long hours spent to graphically transmit each idea.

Thank you Nicole Ellena for the trust and dedication in transmitting the knowledge about the essence of the Earth.

Thank you Christian Cosgrove and Matias Echeverría for beautifully expressing in sound the description of each of my words.

Thank the Navy's Hydrographic and Oceanographic Service for your support and authorization to reproduce a 3D image of the Biobio canyon.

Thank you Francisco Fabrega for your friendship and trust.

Thank you Alfredo Rates for your generosity and sharing your own knowledge.

Thank you to the whole Qactus team for the development of 3D modelling "sculptures" of recycled plastic filaments.

Thank you Matias and Andrea Lira for being present.

Thank you Natalia Cummins for your constant support.

Thank you Andres Subercaseaux for each and every advise.

Thank you Antonia and Joaquin Aguilar for always being willing to collaborate in whatever is needed.

Thank you Francisca Tondreau and Claudia Escobar for opening the doors to see the world thru The Nature Conservancy and all your research.

Thank you Juanita Sutil of your strategic and logistics support filled with love. Thank you Oscar Vargas, Marlene Carrasco, Vicente Baeza, Estela Acha, David Dobson, Katherine Perez, Paula Caballeria, Francisca Lopez, Juan Manuel Uzcategui, Maria Jose Marvel, Ximena Cabana, Samuel Venegas, Carlos Merino and each person at the Museum of Visual Arts for always being available.

Thank you Soledad Hernandez and Isidora Latorre for transmitting through communications that CHRONOMETER should have maximum diffusion. Thank you Mauricio Schaeffer and Clodomiro Quitral for your extended hours of filming the ocean.

Thank you eduardo Sorensen for being my teacher underwater and above all for teaching me how to feel the ocean in a different perspective.

Thank you Benjamin Pacheco for you immediate and constant availability regarding technical issues.

 $Thank you Jorge\ Brantmayer for the specifics\ of\ the\ photographic\ registry.$

Thank you Ivan Hinojosa for creating special material for CHRONOMETER regarding the acoustic contamination of the ocean.

Thank you Sonic Sea for the inspiration.

Thank you Papa, Pablo and Yves for being angels and guides wherever you are.

Thank you Jose Gonzalez Colvin for the good dialogue and technical support. Thank you Jaime Alarcon for all the dedication and dedication to enhance our images.

Thank you Juan Jose Aldunce, Roy MacDonald and Andres Terrisse por straightening in such a beautiful way the waves.

Thank you Patricia Ready for opening the doors in Chile to share my exhibits. Thank you Isabel Aninat for traveling for so long overseas and sharing my gaze.

Thank you Domingo Sandoval and Andrea Bacigalupo for being a part of the project since the beginning.

Thank you Christian Goldberg Valenzuela for your constant support.

I thank Geiger, Photographic Lab in Germany for producing my photographs at a large scale with so much dedication and above all for always making me feel as family.

Thank you to all the means of communication for making the existence of CHRONOMETER visible.

Thank you to so many that I have not named in this page, for allowing CHRONOMETER to travel in order to spread its message.



CHRONOMETER

2019

Installation (site-specific) variable dimensions.

CREATION, DESIGN, LOGISTICS, ORGANIZATION AND MONTAGE

© Denise Lira-Ratinoff

DESIGN, LOGISTICS AND MONTAGE ORGANIZATION

© Patricio Aguilar Díaz

© CHILOE CINE

CURATORS & PRODUCTION

© Denise Lira-Ratinoff &

© Patricio Aguilar Díaz

© FOREVER CHILE

PHOTOGRAPHY INSTALLATION: 10:22:50 *Ice 11*, from the series *Glaciers*

Chromogenic Print Print size 170 x 115 cm. (67 x 45 in.) 2008. Printed 2017

© Denise Lira-Ratinoff

12:02:18 Desert 101, from the series Desert Chromogenic Print Print size 270 x 180 cm. 2012. Printed 2017 © Denise Lira-Ratinoff

DIGITAL CHRONOMETER MURAL Instalación dimensiones variables

REGISTRY PHOTOGRAPHS OF THE INSTALLATION © Jorge Brantmayer, 2018-2019 © Guillermo Feuerhake, 2018-2019

© Patricio Aguilar Díaz, 2018-2019 © Denise Lira-Ratinoff, 2018-2019

Ехнівіт: **Executive Director**

José Manuel Belmar One Moment Art





WESSAINT/AURENT

Whales Sound

Audios gathered from the MARU buoys from 2012 and Golfo de Peas expedition 2017.

Intellectual Property © Fundación MERI.

VIDEO/SOUND INSTALLATION Movimiento I, 2018 9 minute Video, High Definition Color

© Denise Lira-Ratinoff &

© Patricio Aguilar Díaz

GRAPHIC DESIGN Guillermo Feuerhake

































