



ZERO PLASTIC OIL NETS AT SEA

BioDesign Foundation
presents

Vox Maris
and Life Save Project



BIODESIGN
FOUNDATION

A LITTLE BIG STEP



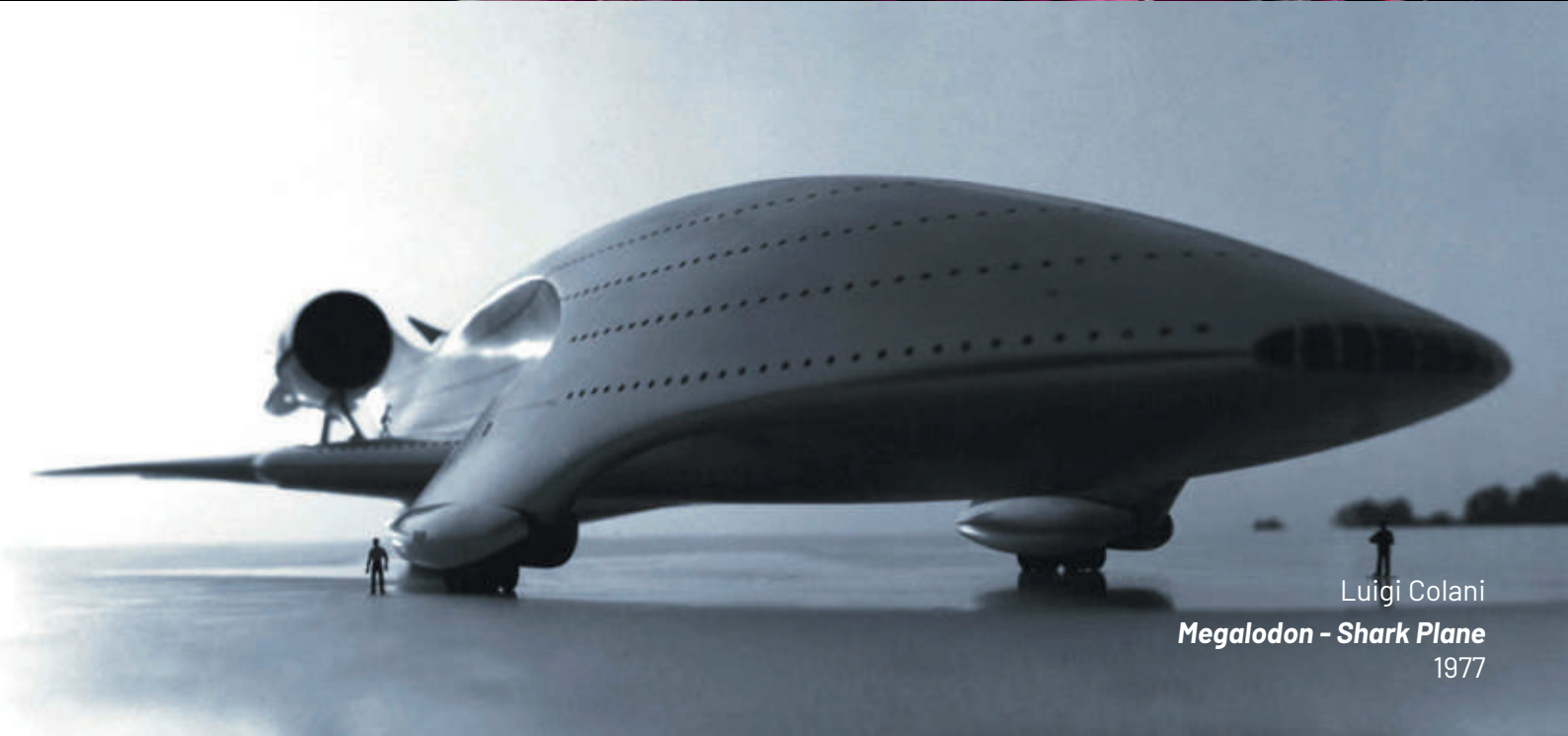
The **BioDesign Foundation** is a **non-profit organisation** represented in various countries and based in St. Gallen, Switzerland. Based on the principles of BioDesign developed by Luigi Colani, the foundation promotes the research and implementation of **sustainable solutions** to protect nature and the environment.

The **Earth Solution Project** is a platform created by the BioDesign Foundation to report, collect and address in concrete actions all the challenges that the Earth and the environment pose to us. Through the Earth Solution Project, the BioDesign Foundation pursues its environmental mission by transforming environmental problems into challenges, solutions and actions.





Luigi Colani
C-112
1969



Luigi Colani
Megalodon - Shark Plane
1977



Luigi Colani
T600
2017



Luigi Colani
Hamburg-München (HM-1)
1978

The BioDesign Foundation is based on the work and thinking of the designer and great visionary **Luigi Colani**, who used to say that his work was **90 percent nature and 10 percent transformation Colani**.

He, who drew so much inspiration from nature for his futuristic works, thus emphasised the obligation of man, so richly endowed by it, to give something back to nature, as much as he has received from it. The aim of the BioDesign Foundation is to restore the original beauty of nature.



250.000 KILOGRAMS OF NETS AND SCRAPS COLLECTED

In collaboration with the **consortium of Chioggia shipowners**, the BioDesign Foundation has developed and implemented an effective solution for the collection and disposal of discarded fishing nets and the plastic “caught” in fishing nets: this has given rise to the **Vox Maris** (Voice of the Sea) project.

The foundation **collects fishing waste** (nets and other materials) in containers placed near ports and fish markets. The fishermen deliver the nets and other materials, which are then weighed and processed by the foundation’s staff. The BioDesign Foundation buys the nets from the fishermen so that they are not disposed of in the sea to avoid hazardous waste fees.

Since the foundation was founded in April 2021, more than **250,000 kg of fishing nets and other fishing equipment** have already been **collected** in Chioggia, so that disposal at sea could be avoided. Fishing nets with an estimated total weight of **100,000 tonnes** end up in the Mediterranean Sea **every year**. They take **300 to 600 years** to **decompose** and break down into microplastic particles that poison the sea, its inhabitants and eventually humans. In addition, 30 percent of the nets float in the sea and continue to catch fish. These so-called **ghost nets**, in which dolphins, turtles and many other species perish, are extremely harmful. The **FAO** (Food and Agricultural Organization of the United Nations) estimates the amount of fish caught by them at about **120,000 tonnes per year**. We must prevent fishing nets and other gear used in fishing from being dumped in the sea.

The target for **2023** is to reduce the **number of nets** discarded at sea in Italy to **“ZERO”**. This is possible. To reach this goal, we need as much support as possible.



130 Tons
of nets and fishing
material

Weight Checking
of the fishing nets





THE SECOND CHALLENGE



The **Life Save Project** stems from a specific concern of the fishermen working with the Foundation: they asked the BDF how to enable the **survival** of unintentional “**by-catch**”.

This refers to all those organisms that are unintentionally caught by fishing boats and often die even when they are thrown back into the sea. These are molluscs, starfish, crabs, seahorses, fish unsuitable for commercial exploitation (e.g. too small) and other animals that together form the silent drive of our beautiful sea: similar to a **Swiss clockwork**, whose smaller and bigger cogs all work together to tell the exact time.

The BioDesign Foundation has presented a solution that was developed with the **Department of Biology** at the **University of Padua**. It involves a system in which the catch is placed on a kind of **table-like basin** filled with tempered water. This prevents the animals from drying out. The by-catch is separated from the commercially exploitable animals and immediately put into so-called **life-saving tanks** (water basins) so that the animals remain in their element. From there, they are returned to the sea through pipes that reach up to four metres deep into the water.

Left

Elio Dall’Acqua

Fishermen’s spokesman
of Chioggia

Right

Roberto Guerini

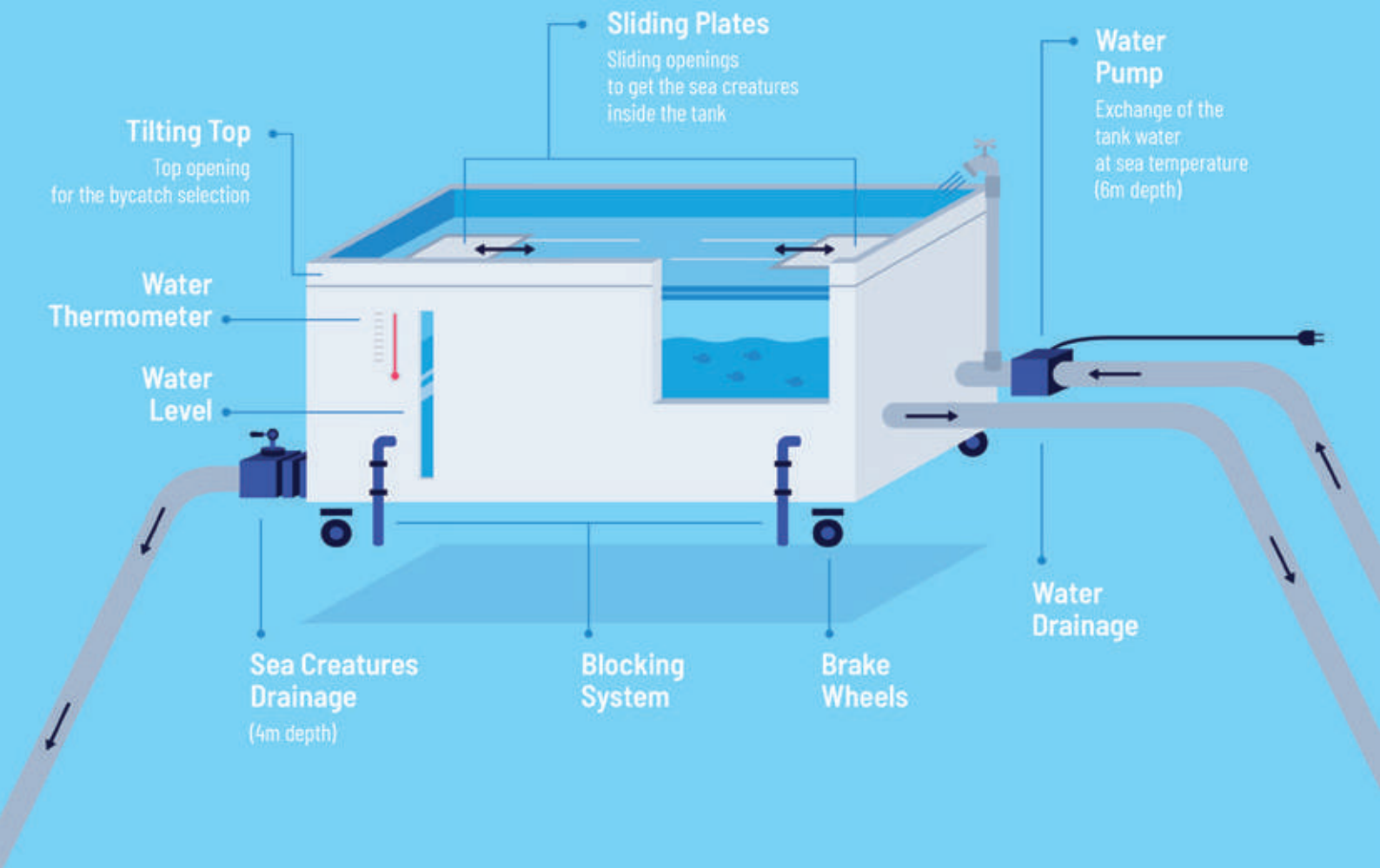
Founder and president
of the BioDesign Foundation





LIFE SAVE PROJECT

Stainless Steel Life Save Tank



ETHICAL FISHING



The Vox Maris Life Save Project, whose goal is the survival of the by-catch, is currently at the center of a **scientific study** led by the University Padua. As part of this project, the Foundation is funding **research grants** for two marine biologists for the duration of one year on eight vessels (four equipped with life-saving tanks, four without) to evaluate its **effectiveness**. A **survival rate** of the by-catch of **70 percent**. The first results of the research will be available in the spring. In a year, the BioDesign Foundation will then present the final scientific report to the public. The goal is that fishermen who use this system will get a better price for their fish through the **"Life Save Project Certificate"** for their catch. We also hope that later the life-saving tank system will become mandatory on all fishing boats.



LIGURIA 510

17	Alassio	21	Loano
8	Arenzano	2	Moneglia
31	Camogli	8	Monterosso al Mare
10	Chiavari	1	Portovenere
6	Finale Ligure	5	Portofino
2	Foce di Magra	1	Rapallo
51	Genova	5	Riva Trigoso
54	Imperia	40	Sanremo
42	La Spezia	34	Santa Margherita Ligure
2	Laigueglia	74	Savona
8	Lavagna	24	Sestri Levante
2	Le Grazie	26	Varazze
11	Lerici	19	Ventimiglia
6	Levanto		

VENETO 901

9	Burano
106	Caorle
218	Chioggia
56	Jesolo
19	Pellestrina
280	Porto Levante
79	Porto Tolle
56	Scardovari
78	Venezia

FRIULI V. G. 406

90	Grado
1	Lignano Sabbiadoro
227	Marano Lagunare
39	Monfalcone
13	Muggia
6	Sistiana
30	Trieste

TOSCANA 586

10	Capraia	9	Marciana Marina
16	Castiglioncello	9	Marina di Campo
25	Castiglione della Pescaia	45	Marina di Carrara
1	Cavo	14	Marina di Grosseto
11	Cecina	22	Marina di Pisa
19	Follonica	47	Orbetello
22	Forte dei Marmi	20	Piombino
3	Giglio	5	Porto Azzurro
61	Livorno	21	Porto Ercole
		46	Porto Santo Stefano
		34	Portoferraio
		3	Rio Marina
		6	San Vincenzo
		6	Talamone
		20	Vada
		111	Viareggio

SARDEGNA 1413

88	Alghero	44	Castelsardo	93	Porto Torres
71	Arbatax	40	Golfo Aranci	36	Portoscuso
25	Bosa	35	La Maddalena	329	Sant'Antioco
210	Cagliari	31	Olbia	25	Santa Teresa Gallura
11	Cala Gone	299	Oristano	37	Siniscola
38	Carloforte	1	Porto Conte		

LAZIO 580

108	Anzio
69	Civitavecchia
76	Formia
40	Gaeta
39	Ponza
109	Roma
19	San Felice Circeo
1	Sperlonga
65	Terracina
48	Torvaianica
6	Ventotene

CAMPANIA 1090

47	Acciaroli
37	Agropoli
23	Amalfi
37	Baia
5	Capitello
20	Capri
6	Casamicciola
9	Castellammare di Stabia
24	Castel Volturno
52	Cetara
13	Forio

76	Ischia
16	Maiori
27	Marina di Camerota
8	Pisciotta
33	Massa Lubrense
1	Meta
15	Mondragone
3	Monte di Procida
64	Napoli
26	Palinuro
14	Piano di Sorrento

12	Portici
21	Positano
74	Pozzuoli
33	Procida
139	Salerno
45	Santa Maria di Castellabate
25	Sapri
14	Scario
30	Sorrento
54	Torre Annunziata
39	Torre del Greco
18	Torregaveta
26	Vico Equense
4	Vetri sul Mare

EMILIA ROMAGNA 341

Bellaria	35	Porto Garibaldi	61
Cattolica	38	Ravenna	23
Cervia	36	Riccione	22
Ferrarese	45	Rimini	81

MARCHE 680

Ancona	173
Civitanova Marche	66
Cupra Marittima	36
Fano	84
Gabicce Mare	43
Grottammare	1
Marotta	15
Numana	31
Pedaso	6
Pesaro	22
Porto Recanati	21
Porto San Giorgio	90
San Benedetto del Tronto	16
Senigallia	75

ABRUZZO 516

Francavilla al Mare	10	Pescara	91
Giulianova	56	Roseto degli Abruzzi	30
Marina di San Vito	6	Silvi	36
Martinsicuro	29	Tortoreto	60
Ortona	128	Vasto	70

CALABRIA 821

Cetraro	42	Praia a Mare	28
Cirò Marina	55	Reggio Calabria	42
Corigliano Calabro	99	Roccella Ionica	8
Crotone	105	San Lucido	8
Diamante	9	Sant'Angelo	3
Gioia Tauro	22	Scalea	3
Melito di Porto Salvo	8	Scilla	16
Monasterace Marina	4	Siderno	23
Nicotera	5	Soverato	25
Palmi	37	Trebisacce	26
Paola	23	Tropea	23
Pellaro	9	Vibo Valentia	47
Pizzo	29	Villa San Giovanni	6

MOLISE 96

Termoli 96

Amantea	21
Bagnara	55
Belvedere Marittimo	2
Bianco	6
Bova Marina	3
Brancaleone	1
Cariati	28

BASILICATA 1

1 Policoro

PUGLIA 1483

Bari	72
Barletta	36
Bisceglie	33
Brindisi	87
Castro	25
Gallipoli	157
Giovinazzo	5
Lesina	41
Leuca	28
Manfredonia	227
Margherita di Savoia	45
Maruggio	9
Mola di Bari	78
Molfetta	51
Monopoli	105
Otranto	36
Peschici	20
Rodi Garganico	136
Taranto	145
Torre Cesarea	66
Torre San Giovanni	17
Trani	28
Tricase	10
Vieste	26

SICILIA 2633

Isola delle Femmine	92
Lampedusa	88
Levanzo	1
Licata	108
Lipari	107
Marettimo	16
Marsala	101
Mazara del Vallo	200
Messina	52
Milazzo	82
Mondello	47
Ognina	11
Palermo	57
Pantelleria	17
Patti	52
Porticello	224
Porto Empedocle	58
Portopalo di Capo Passero	31

Pozzallo	54
Pozzillo	18
Riposto	56
Salina	14
San Cataldo	24
San Vito Lo Capo	24
Sant'Agata di Militello	49
Santa Maria la Scala	29
Santa Teresa di Riva	12
Santo Stefano di Camastra	15
Sciacca	119
Scoglitti	64
Siracusa	76
Spadafora	28
Termini Imerese	78
Terrasini	38
Torre Faro	42
Trabia	16
Trapani	113

Aci Castello	46
Augusta	55
Avola	18
Balestrate	31
Capo D'Orlando	8
Castellammare del Golfo	24
Catania	90
Cefalù	48
Favignana	26
Gela	27
Giardini	47

The Beauty
of the
Venetian seabed

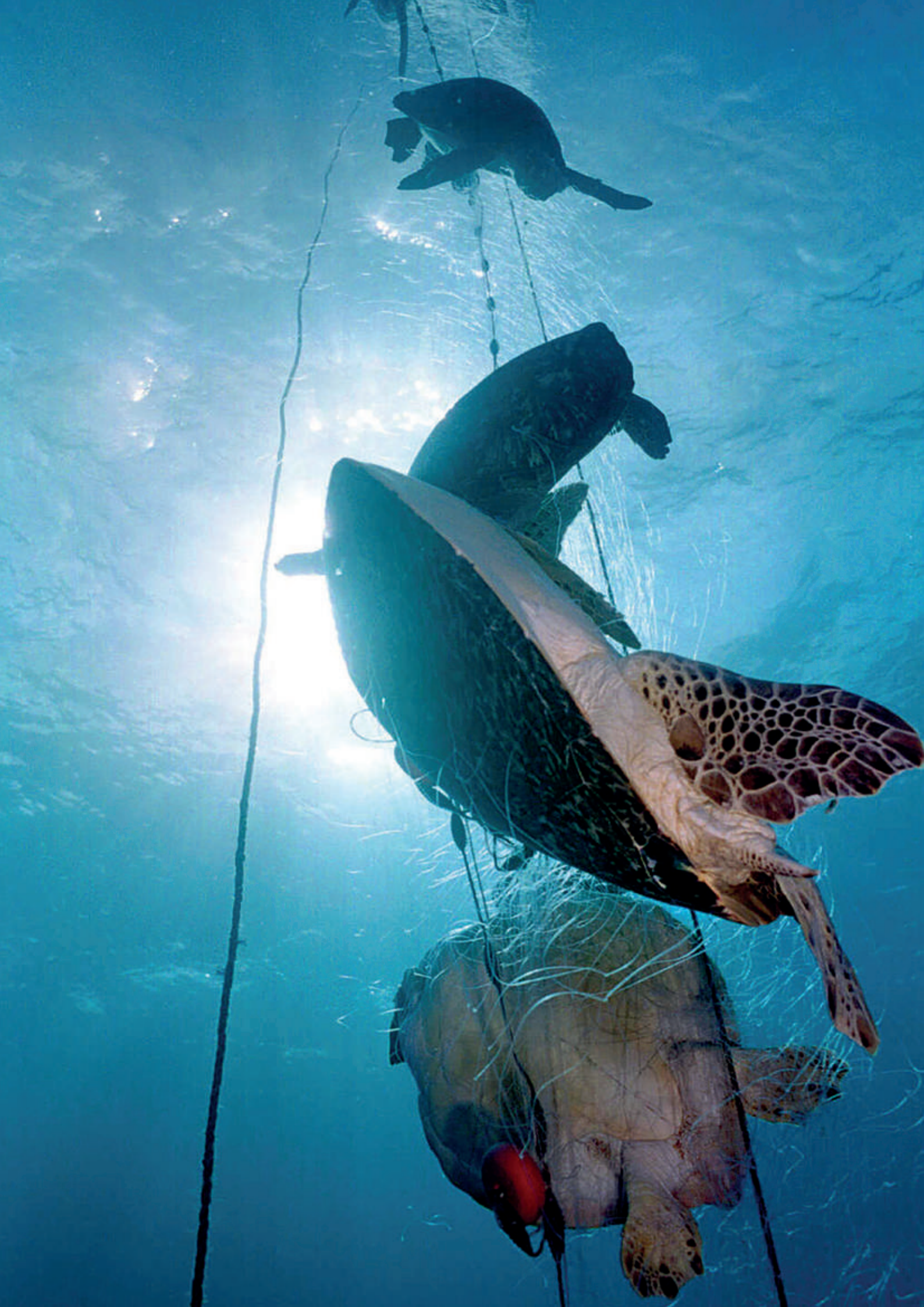


The Horror
of the nets down
the Adriatic seabed



Sea animals caught in nets
Ghost Fishing







A SUSTAINABLE FUTURE

River Brenta
**BioDesign River
Cleaning Project**

The **BioDesign River Cleaning Project** is a modular and intelligent barrier that, placed diagonally in watercourses to cover their entire width, has the purpose of **blocking floating and semi-submerged** waste before it reaches the sea. Thanks to an **interception efficiency of over 90%**, it constitutes a practical and functional solution to reduce water pollution while recovering valuable material.

The BioDesign River Cleaning Project harnesses the force of water to move debris towards a collection point, with a movement similar to a series of cogs. Thanks to the specially developed design of the impellers, **the system requires no energy** and does not hinder the natural flow of water or the passage of wildlife.

The Biodesign River Cleaning system is entirely modular at the installation site: first the support structure is assembled, divided into several sections, then the impellers are mounted, and finally the structure is lowered into the water. Fastening is performed by means of two simple cables that keep the system in the correct position.



The Custodians
Zero oil at sea

The **Zero Oil at Sea project** collects used oil from every boat which, in the absence of a proper disposal system, often ends up being dumped in the bilge and then directly into the sea.

Used oil can be treated to be used again for the same purpose. By collecting it to treat it and reuse it, the production and consumption cycle of the resource can be closed. The project implies the placement of oil collection drums and tanks so that every boat can dump the used oil free of charge in every port it lands in.



The “**Custodians**” are the think tank of the BioDesign Foundation. Being a Custodian of the Future means looking for solutions to **protect nature**. Custodians contribute their ideas or get actively involved in cleaning up beaches, rivers and oceans or wherever action is needed to **restore** the beauty of nature. The first environmental gesture of the Custodians of the Future is their effort to lead a healthy and ethical lifestyle, respectful of other people and the environment and beauty in which they live.

Those who can, actively **help** or **support** the activities with material and other resources.

The Custodians Earth Solution Platform is a tool (software) conceived by the BioDesign Foundation and designed by **ETT S. p. A.** to create a bridge between those who see and experience environmental problems and those who have the means to solve them.

An oil leakage in a river, a beach full of plastic, or a dump in a wood is reported with pictures and a description. Later, refuse collectors and environmental restoration operatives take care of resolving the report so that there appears a green marker on the platform: **challenge resolved!**

In a nutshell this is:

Coordination system for cleaning up the planet, based on the cooperation of all components of society

Database of georeferenced photos of environmental problems uploaded by users

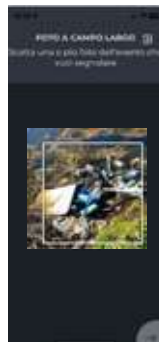
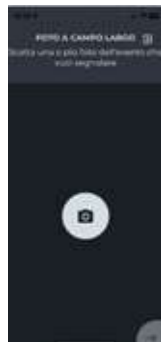
Map of **ecological victories**

The Custodians Earth Solution Platform transforms every “dirty” corner into challenge, solution, action.

Some members of
*The Custodians
of the Future*



THE CUSTODIANS EARTH SOLUTION PLATFORM



It all starts with your contribution: open the app and submit a report!

Select the new report icon and take the photo. Confirm the photo or take a new one.

Help us understand the severity of the report and indicate the main problems. Then, verify that it has been properly recorded-



THE PLASTIC RACE

With the arrival of the famous round-the-world regatta **The Ocean Race**, of which BioDesign Foundation is a sustainable guest in the 2023 edition, there starts an even more challenging world tour: **The Custodians Plastic Race – We clean the planet**. It is a race against time to preserve biodiversity and so life on Earth, through a systematic cleaning of every city, beach, seabed, hill, mountain, river, forest.

The Custodians Plastic Race starts from **Genoa in June 2023**. Here, a team of professional sailors passes the baton to a super-team composed of institutions, law enforcement agencies, schools, associations, companies with their employees, kids, and grown-ups. In the regatta village at the Colani Future Truck, the guests of the event are informed about The Plastic Race project, along with all the other initiatives and philosophy of the BioDesign Foundation.

The Custodians Earth Solution Platform enables the super-team to clean up according to a well-defined model that makes the **intervention punctual, fast, and effective**.



THE CUSTODIANS

PLASTIC RACE
WE CLEAN THE PLANET

TOWARDS THE NATIONAL DAY OF CLEANLINESS

From Genoa The Custodians Plastic Race goes around Italy with the wind blowing into the sails of **Marina Militare Nastro Rosa Tour**. Every stop of this regatta – La Maddalena, Napoli, Vibo Valentia, Taranto, Vieste, Rimini, Portorose and Venezia – is cleaned from the ground up as in Genoa through the same intervention format. Concomitantly to the systematic clean-up, BioDesign Foundation includes these cities in the Vox Maris Project, implementing the infrastructure of the collection of broken fishing nets. The regatta makes The Custodians Plastic Race land in **Slovenia**, where **it starts the cleaning of the Mediterranean area and of the entire Planet**.

The objective is to complete a capillary clean-up of seabed, shores and hinterland. The ambition of instituting in October the **“Italian National Day of clean seas and lands”** would entail a record in history as the first country in history to accomplish a total cleaning of all the territory.

The Custodians Plastic Race is only possible thanks to The Custodians Earth Solution Platform: the coordination tool for widespread intervention ensures effective cooperation between all components of society, not only civil society. With a deep clean-up of seas and lands, a culture of cleanliness and respect towards nature is transmitted.

The contribution of everyone is needed to reverse the course, to clean the planet and keep it beautiful: it is the only alternative we have.

There are not superheroes but **super-teams**.

THE FORMAT



The presence at sea will be monitored by:

The **HYDROGRAPHIC INSTITUTE OF THE NAVY**:

Scans the seabed for litter and uploads the spots to be cleaned on The Custodians Earth Solution Platform.

The **COAST GUARD**:

Coordinates all clean-up activities at sea and on the beaches. Thanks to the Underwater Operators of the Coast Guard, through GPS signals on the platform, a targeted cleaning of the sea is carried out from the surface to the bottom, also with the contribution of local diving centres.

The onshore presence will be coordinated by:

The Custodians Earth Solution Platform and led by the **CIVIL PROTECTION**. All urban areas and natural areas of the municipality will be scanned to mark the spots to be cleaned up.

The **CIVIL PROTECTION** through GPS alerts on the platform organises the cleaning actions of the extraordinary team consisting of law **enforcement agencies, schools, associations, companies with staff and volunteer citizens**.

Only altogether can we solve the emergency of plastic.



Hydrographic Institute of the Navy, which works with the best technologies for monitoring and cleaning the seas



Coast Guard in action for The Custodians Plastic race



Coast Guard diving team during the seabed cleanup operation



Civil Protection leads ground
cleanup



schools, teachers, children,
parents on the beach to clean
them up



Genova Insudtrie Navali
accepts the challenge of
The Custodians Plastic race by
cleaning up the harbour



Amiu clean up the streets by
bringing
The Custodians Plastic race
throughout Genoa



"CHALLENGES, SOLUTIONS, AND ACTIONS"

In summary, the BioDesign Foundation solves seven problems concretely:

Zero fishing nets at sea

We recover nets lying on the seabed

Zero motor oil at sea

Vox Maris - Life Save Project to **save** about **70%** of the total **by-catch**

Zero plastic at sea

BioDesign Foundation River Cleaning to avoid 40 million tons of plastic from ending up in the sea

The **Custodians Earth Solution Project** to clean up the planet from top to bottom

To achieve these goals, first in the Mediterranean, in the Northern and Baltic Seas, and subsequently in all Nations and in all Oceans, we need as much support as possible.

BioDesign Foundation Sustainable Partner



**Project Class40,
Alberto Riva**



**Regata Marina
Militare Nastro Rosa**



**Team Genova,
Austria Ocean Race**

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