

NO TODO ESTÁ PERDIDO
...¡PERO ESPABLEMOS!
Juan Martín Bermúdez

WE GO COOP
Universidad de Cádiz
septiembre de 2025



Según RAMSAR, desde 1700
hemos perdido el 90% de los
humedales del planeta

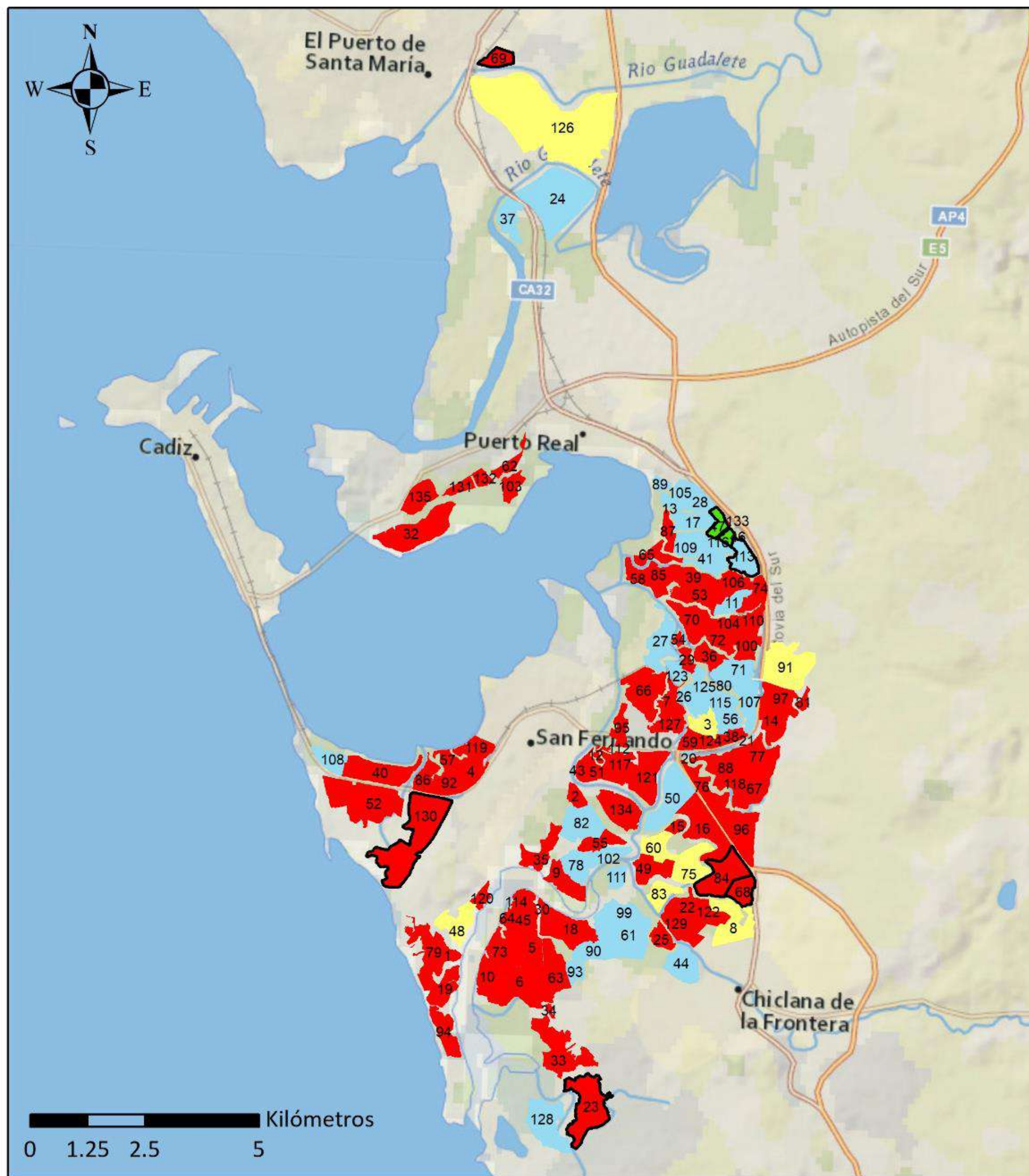


Bahía de Cádiz
Andalucía
España

 	GOBIERNO DE ESPAÑA	VICEPRESIDENCIA TERCERA DEL GOBIERNO	SECRETARÍA DE ESTADO DE MEDIO AMBIENTE
		MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA Y EL RETO DEMOGRÁFICO	DIRECCIÓN GENERAL DE LA COSTA Y EL MAR DEMARCAÇÃO DE COSTAS DE ANDALUCÍA.ATLÁNTICO



 WE GO COOP	 Interreg Euro-MED	 Co-funded by the European Union
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Usos reales de las salinas del Parque Natural Bahía de Cádiz Abril-2021

- | | | |
|-----------------------------------|---------------------------------------|---|
| 1 Adolfo (San) | 46 Esperanza Chica (La) | 91 Molino de Ossio |
| 2 Agapito (San) | 47 Esperanza Grande | 92 Molino San José |
| 3 Águila (El) | 48 Estanquillo (El) | 93 Molinera del Sur (La) |
| 4 Agustín (San) | 49 Eugenio (San) | 94 Nicolás (San) |
| 5 Alejandro (San) | 50 Federico (San) | 95 O (Nuestra Señora de la) |
| 6 Amalia (Sta) | 51 Felipe (San) | 96 Pablo (San) |
| 7 Ana (Sta) - Ana y Juan- | 52 Félix (San) | 97 Pascual Bailen (San) |
| 8 Ana y San Juan de Bartivas | 53 Fernando (San) | 99 Pastorita Sur (La) |
| 9 Angeles Custodios (Los) | 54 Florencio (San) | 100 Patricio (San) |
| 10 Antonio (San) | 55 Francisco de Asís (San) | 101 Patrocinio |
| 11 Atravesada (La) | 56 Francisco Javier (San) | 102 Pedro (San) |
| 12 Aurora (Ntra Sra de la) | 57 Gabriel (San) | 103 Pedro y San José (San) -La Covacha- |
| 13 José de Barbanera (San) | 58 Gertrudis (Sta) | 104 Perla (La) |
| 14 Bárbara (Sta) | 59 Hacienda Chica | 105 Pilar (Ntra Sra del) |
| 15 Basilio (San) | 60 Hermanos (Los) | 106 Polvera y Aurora |
| 16 Beatriz (Sta) | 61 Imperial (La) | 107 Populo (El) |
| 17 Belén de Levante y Poniente | 62 Imposible del Trocadero (La) | 108 Preciosa y Roqueta |
| 18 Borriquera (La) | 63 Industria (La) | 109 Rafael (San) |
| 19 Calavera (La) | 64 Isabel (Sta) | 110 Rafael del Monte (San) |
| 20 Caruto (San) | 65 Isabel de Fuera (Sta) | 111 Ramón (San) |
| 21 Caruto (San) | 66 Isleta (La) | 112 Regla y Concha |
| 22 Cañaveral | 67 Joaquín y Santa Ana (San) | 113 Regla y Rosa |
| 23 Carboneros (San Juan) | 68 Joaquín (San) | 114 Ricardo (San) |
| 24 Carlos y San Jaime (San) | 69 José (San) | 115 Rita (Santa) |
| 25 Carmen de Bartivas | 70 José de Balbanera (San) | 116 Rosario (Ntra Sra de) |
| 26 Carmen de San Lorenzo | 71 José del Pámar (San) | 117 Sagrada Familia |
| 27 Carmen de San Miguel | 72 José Horcajo (San) | 118 Sagrado Corazón |
| 28 Carmen Nuevo (Ntra Sra) | 73 José Nuevo (San) | 119 Sagrado Corazón de Jesús |
| 29 Carmen Viejo | 74 José y Animas (San) | 120 San Salvador |
| 30 Catalina (Sta) | 75 José y San Enrique (San) | 121 Santiago (San) |
| 31 Concepción (Ntra Sra de) | 76 José y Santa Ana (San) -El Rubial- | 122 Santísimo Sacramento |
| 32 Consulado | 77 Juan Nepomuceno (San) | 123 Sebastián del Carmen |
| 33 Coto de la Isleta-1 | 78 Judas (San) | 124 Soledad (Ntra Sra de) |
| 34 Coto de la Isleta-2 | 79 Leocadia (Sta) | 125 Talanquera (La) |
| 35 Covadonga (Ntra. Sra. de) | 80 León (San) | 126 Tapa y Marivílez (La) |
| 36 Cristo Misericordia (Sta) | 81 Manuel (San) | 127 Teresa de Jesús (Sta) |
| 37 Desamparados (Ntra Sra) | 82 Margarita (Santa) | 128 Teresa de Paz (Sta) |
| 38 Diego (San) | 83 María de Jesús | 129 Teresa la Nueva (Sta) |
| 39 Divina Pastora (La) | 84 Matilde (Sta) | 130 Tres Amigos |
| 40 Dolores (Ntra Sra de los) | 85 Mercedes (Ntra Sra de) | 131 Trinidad del Trocadero (La) |
| 41 Domingo (Sta) | 86 Miguel (San) | 132 Trinidad Nueva -El Raton- |
| 42 Dulce Nombre de María | 87 Miguel de la Rosa (San) | 133 Vaqueriza La Esperanza |
| 43 Emilia (Sta) | 88 Miguel y San José (San) | 134 Vicario (Isla del) |
| 44 Enrique y Molino de Santa Cruz | 89 Molineta (La) | 135 Victoria del Trocadero (La) |
| 45 Esperanza (La) | 90 Molinera Norte | |

-  Proyectos conservación
-  Sin uso
-  Uso acuícola
-  Uso acuícola y salinero
-  Uso salinero





SALINAS BAHÍA DE CÁDIZ

Hasta 1960: +160 activas

2025: sólo 9 activas

10.522 Has. PNBC

5.373 Has. para trabajar!



Fundamos Salarte en 2012 por ellos; para recuperar el orgullo de ser marismeños, salineros y gaditanos

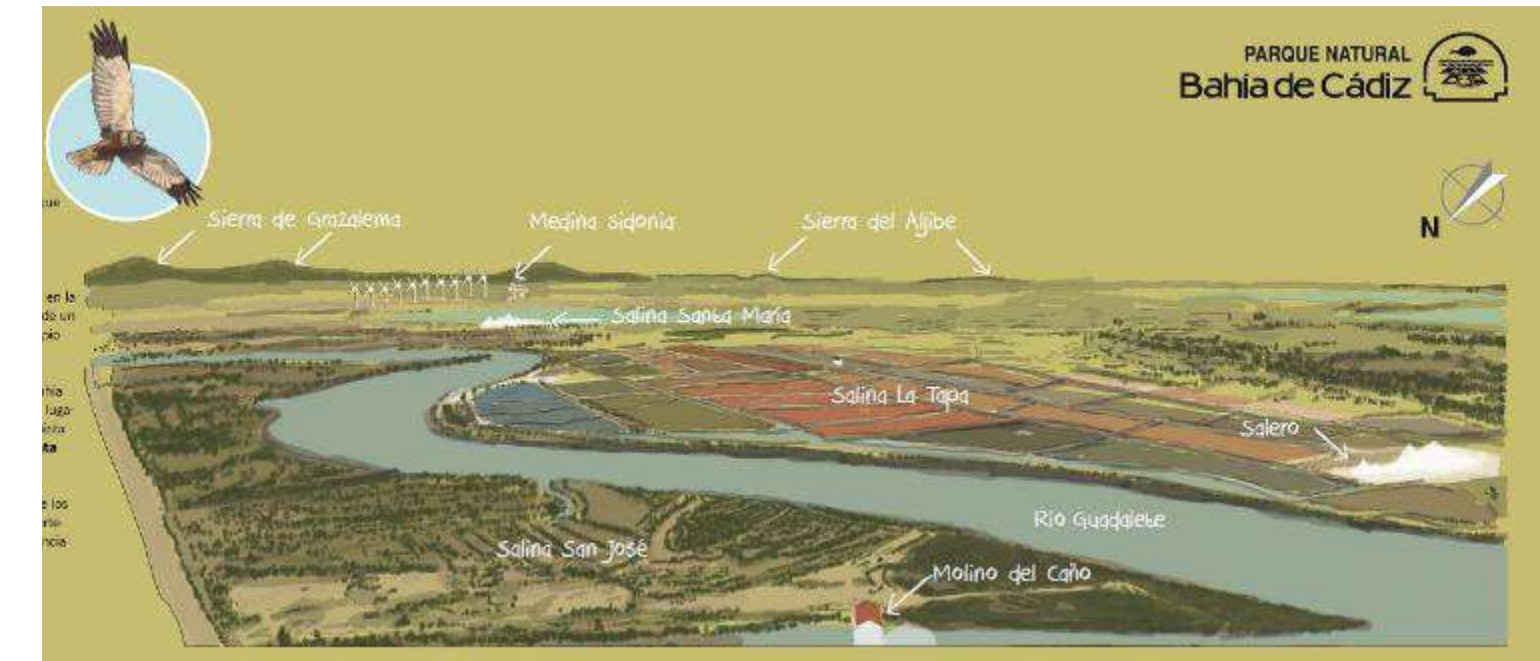
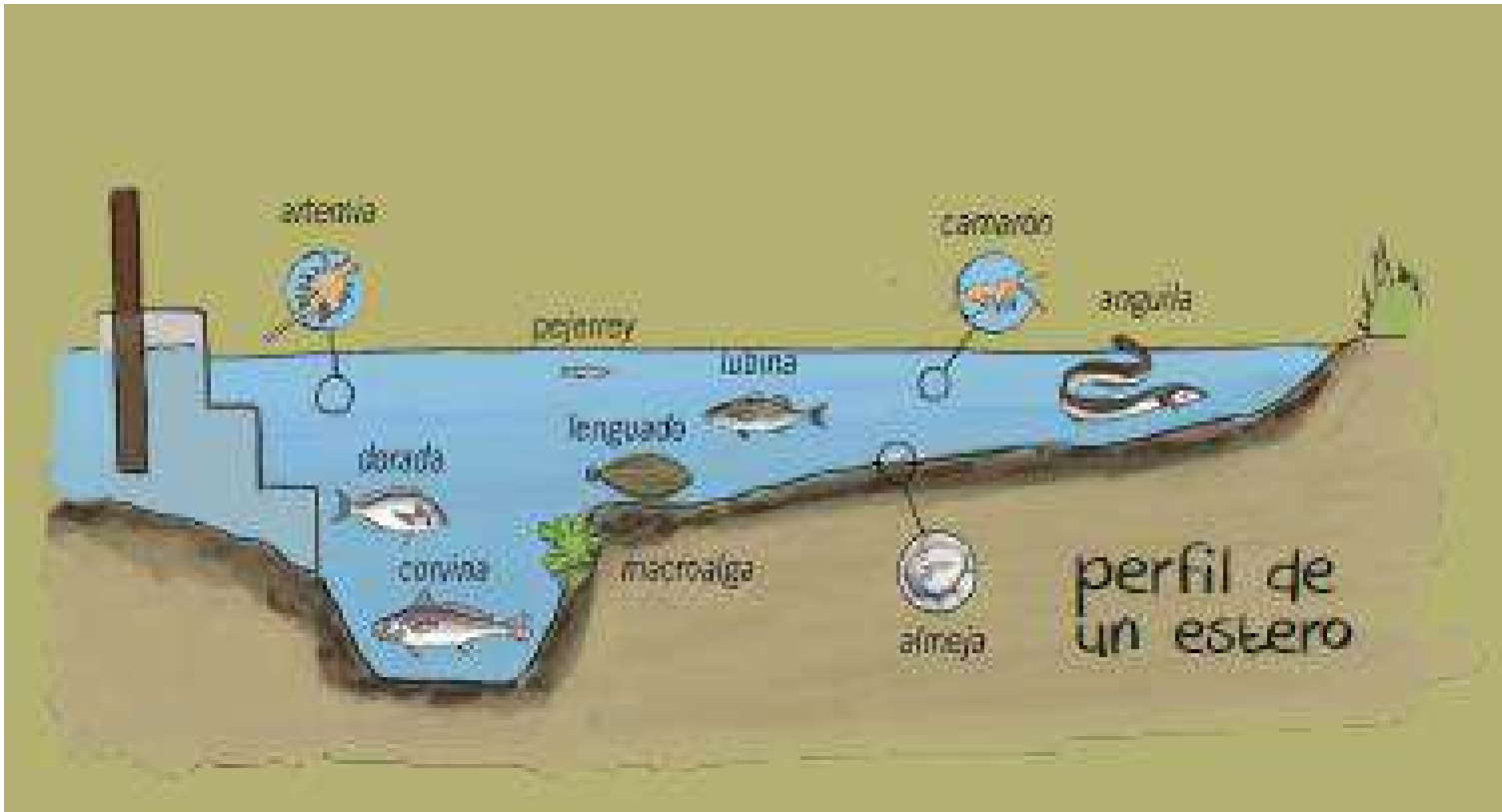
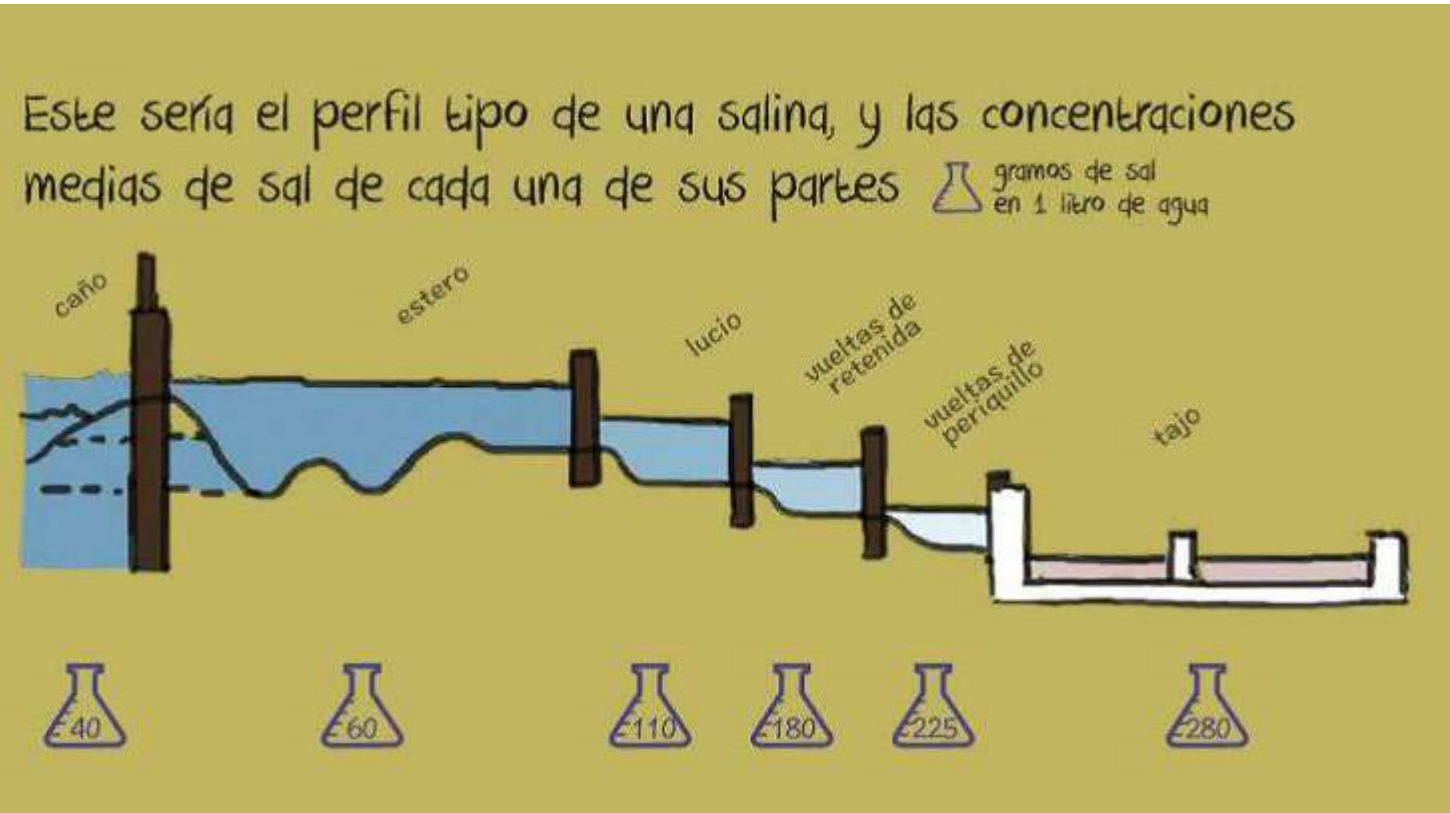
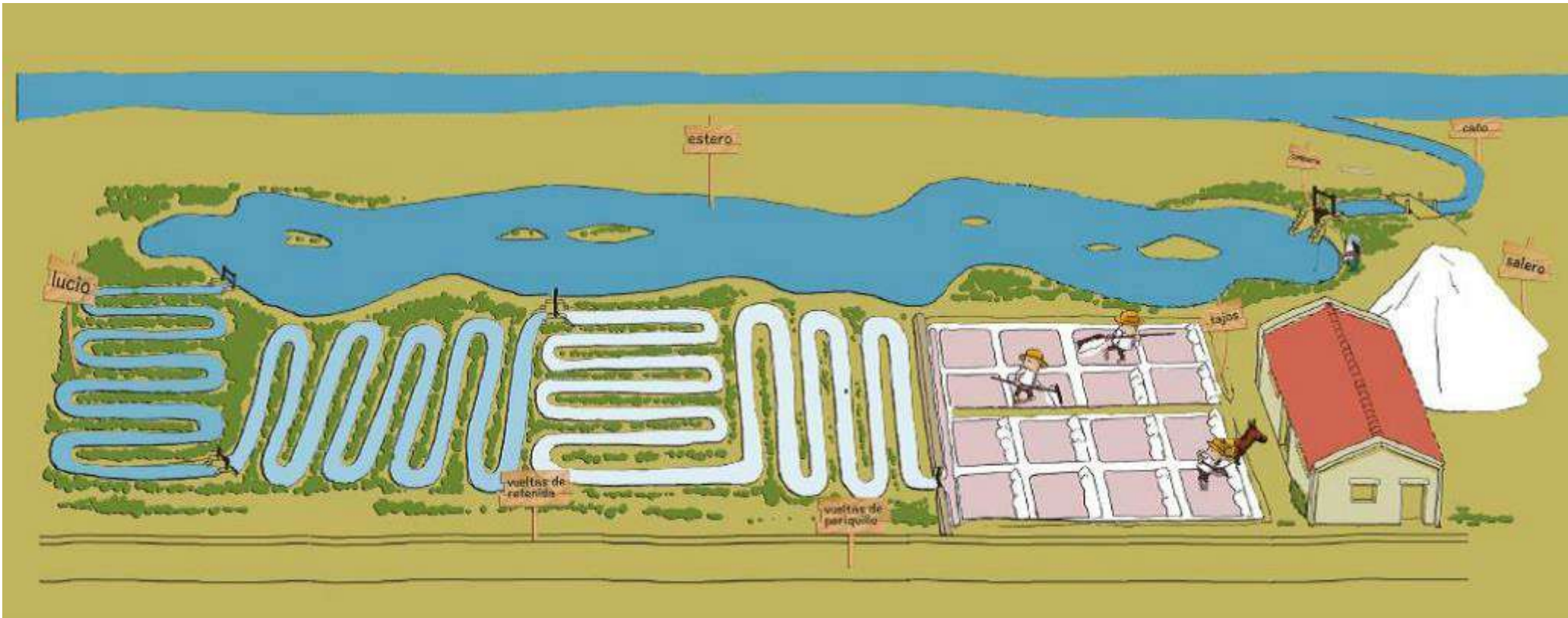


Salinas activas almacenan 150 t CO2 ha-1 más que las salinas abandonadas. Fuente: UCA.

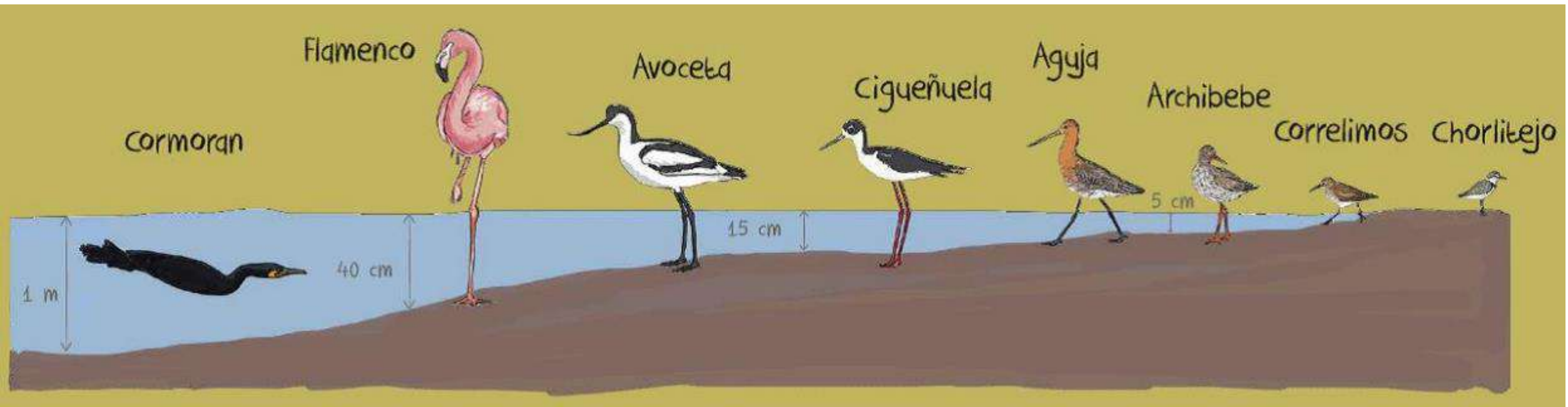


2° largest Blue C sinks
Marsh >60% Rainforest

Salt Marsh
Blue Carbon storage
900 t CO2 ha-1



Saltpans
Blue Carbon storage
700 t CO2 ha-1



Salinas & esteros generan servicios ecosistémicos y bienestar humano

Sports

Fishing

Gastronomy

Birdwatching

O2 production

Algae

Biodiversity

Researching

Fish recruitment

Salt

Vegetables

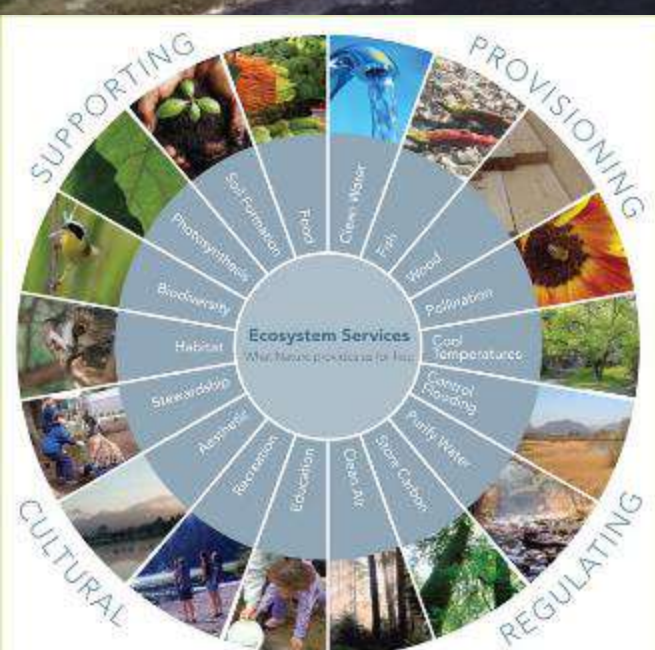
Blue Carbon
(Carbon sink)

Walking

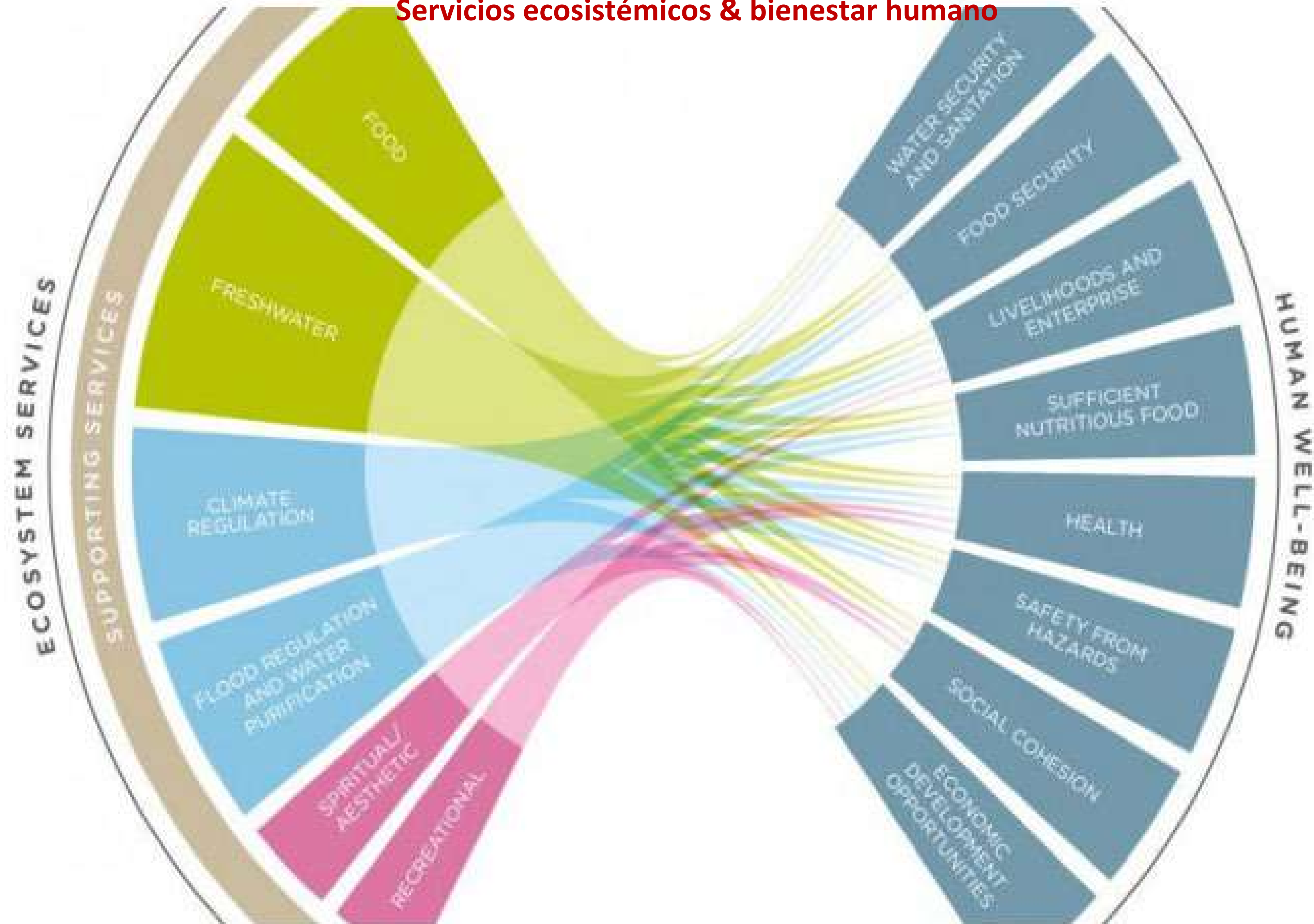
Flood prevention

Molluscs,
crustaceans,
eelgrass,
...

Meat



Servicios ecosistémicos & bienestar humano



Cuántos servicios ecosistémicos genera una marisma?

32

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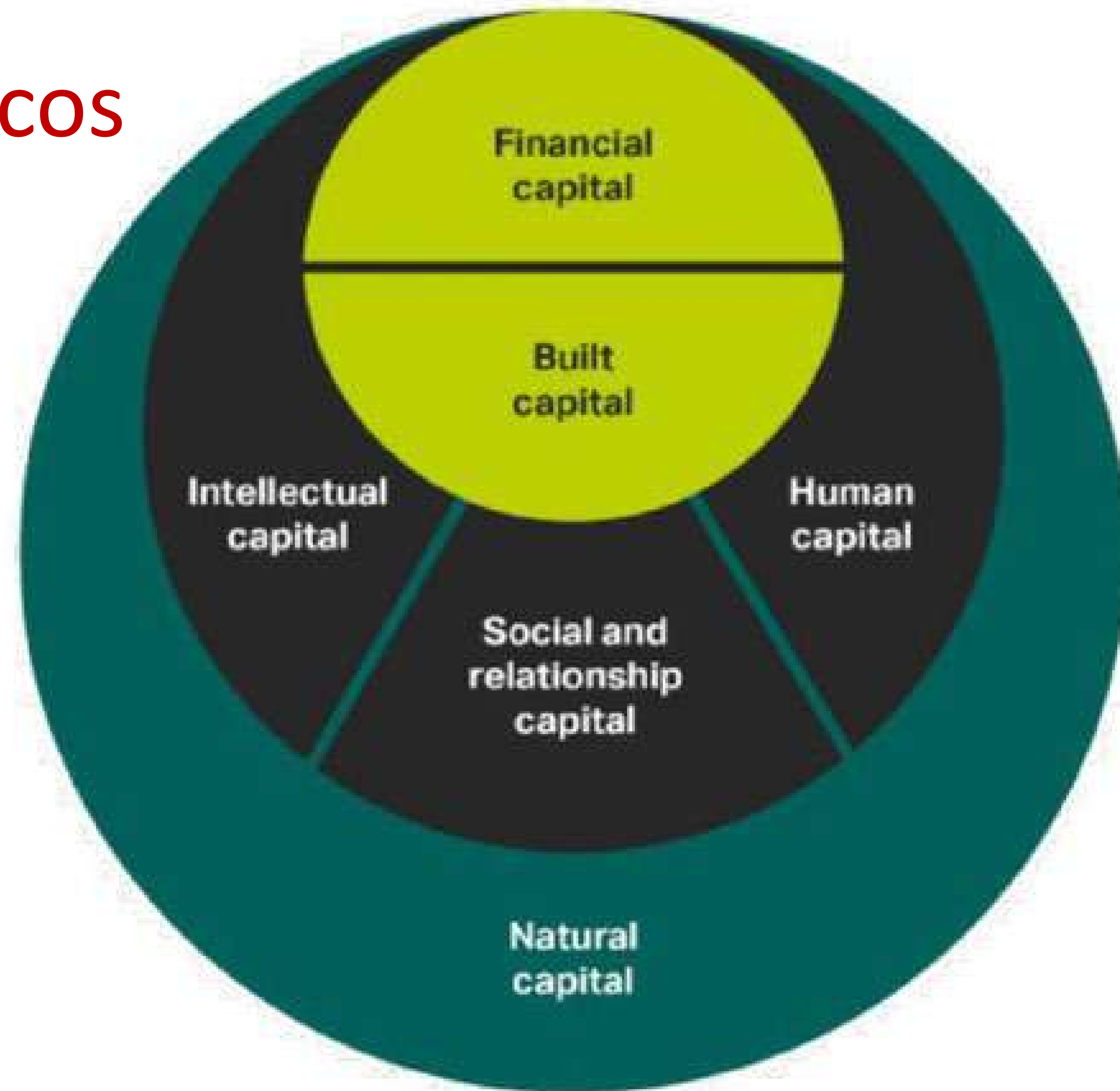
[Investigaciones Geográficas](#)
[Instituto Interuniversitario de Geografía](#)
[Universidad de Alicante](#)

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Identificación y valoración de los Servicios Ecosistémicos del Parque Regional de las Salinas y Arenales de San Pedro del Pinatar (Murcia, España) basado en encuestas a los usuarios

Identification and assessment of the ecosystem services of the Salinas y Arenales de San Pedro del Pinatar Regional Park (Murcia, Spain) based on user surveys

Diana Hernández Mármol^{1*} 
Gustavo A. Ballesteros Pelegrín² 
Francisco Belmonte Serrato³ 





- **Climate Regulation**
- **Flood Protection**
- **Provisioning Services**
- **Coastal Erosion**



DECENIO DE LAS NACIONES UNIDAS SOBRE LA
**RESTAURACIÓN DE
LOS ECOSISTEMAS**
2021-2030



PARQUE METROPOLITANO MARISMA DE LOS TORUÑOS Y PINAR DE LA ALGAIDA







SAN CARLOS – DOÑANA SALTPAN RECOVERY
2017 - 2025

SANLUCAR
DE BARRAMEDA

Antigua Casa
de Carabineros

El Puntal

Pinar de la Algaida

Salinas de
Monte Algaida

Finca Marismillas

La rinconada
del río

Brazo de la Torre

Lucio de Sevilla

Lucio de
Sanlúcar

Lucio del
Molinillo

Caño de Brenes

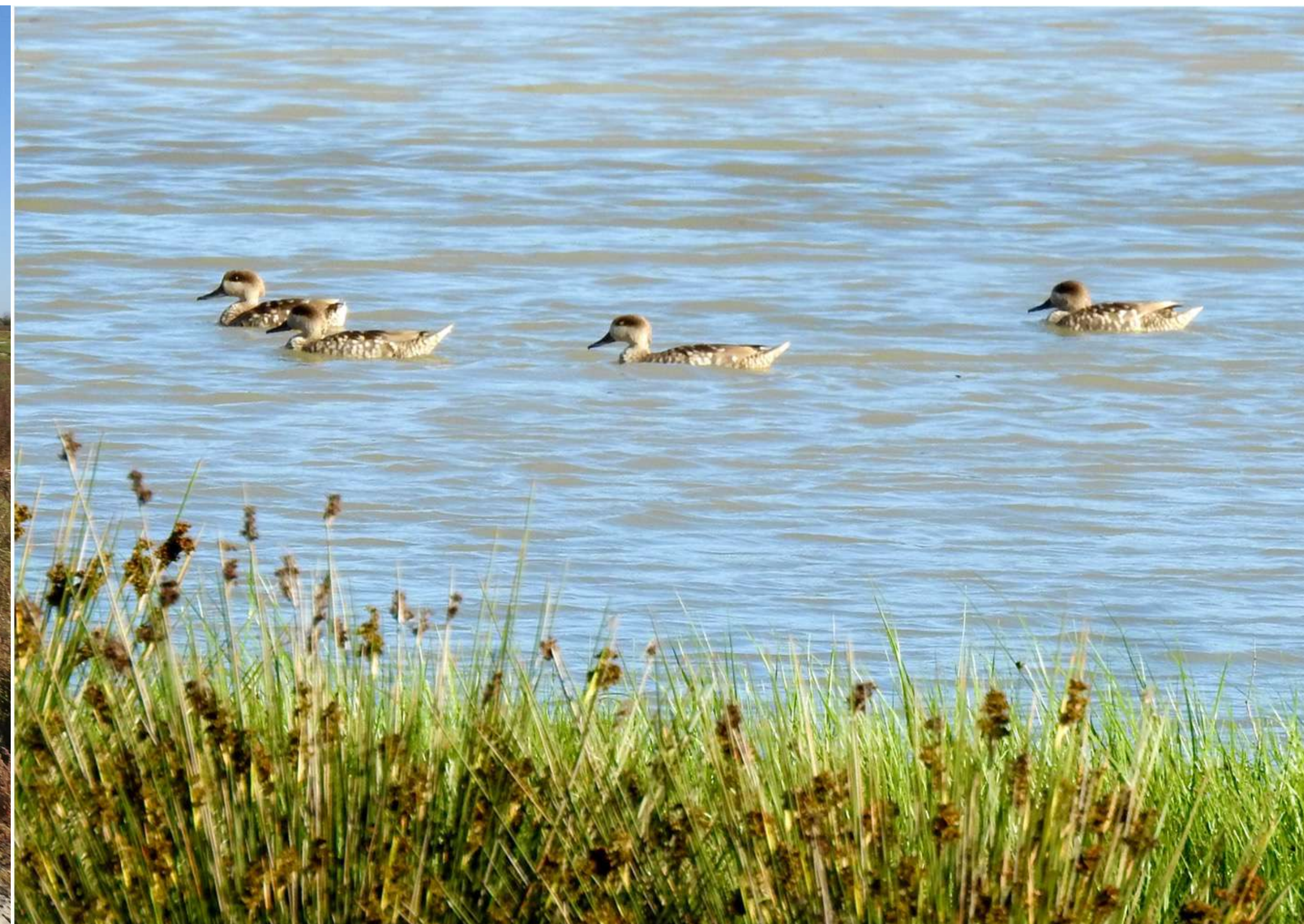
Lucio del Membrillo

Lucio de los ánsares

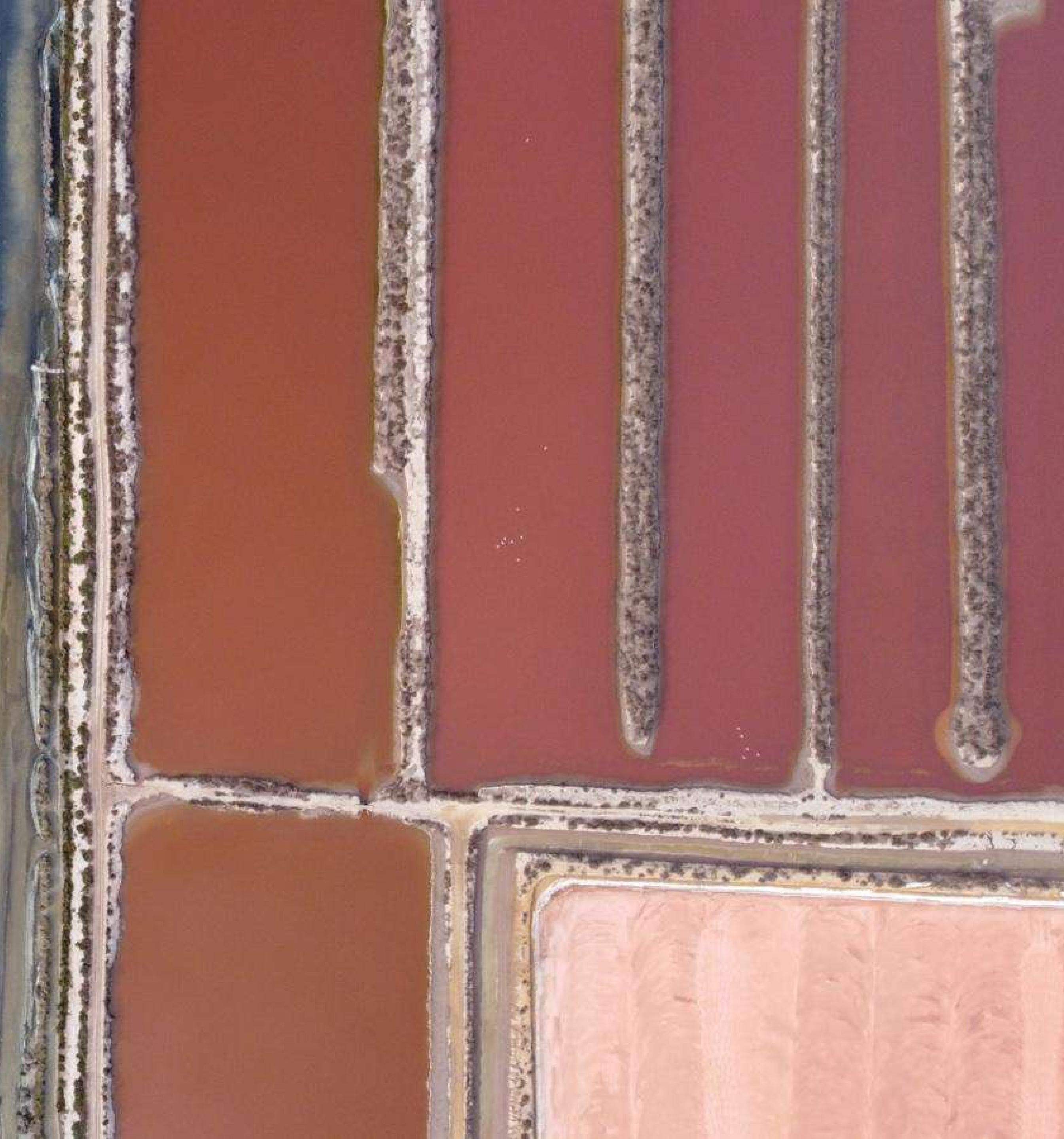
Lucio Largo



SAN CARLOS – DOÑANA SALTPAN RECOVERY
2017 - 2025



Handwritten text in a script, likely Devanagari, covering the left page of the manuscript. The text is arranged in horizontal lines, with some lines being more prominent than others. The ink is dark, and the paper shows signs of age and wear.



ALGUNAS SALINAS RESTAURADAS POR SALARTE

ANTES











LA COVACHA



MAURITANIA SALTPANS



VENEZUELA SALTPANS



ESTERO SANTA CRUZ, SONORA. MÉXICO



Comcaac (Sonora, México) desde 2021



SALINAS LA CONCEPCIÓ. FORNELLS, MENORCA.



SALINS AL FATH, Larache. 2019



Marismas Loukkos. 2025



المدينة القديمة

شواية إقوار

وسط المدينة

حي الليخرو LIGERO

تجزئة المحيط

ZI DU PORT

Site Archéologique de Lixus

Lixus Horses : Horse riding excursions...

Rio Lucus

Rio Lucus

حي السلام

LA ESPERANZA



VOLUNTARIADOS







Salina El Consulado, Isla del Trocadero





Fondo para la Gestión
y Recuperación de la
Marisma Salinera

Santa Teresa de La Paz, Chiclana de la Frontera







Conservation of saltpans as key sites for migratory waterbirds

BirdLife has identified a network of critical sites for migratory birds, called Important Bird & Biodiversity Areas. Amongst them are several saltpans. Together with her international partners, BirdLife contributes to the conservation and valorisation of these saltpans as key sites for migratory waterbirds.

SADO ESTUARY SALTPANS

We already have some good examples of well-managed saltpans in Portugal and solid scientific knowledge to back up our plans. I am looking forward to seeing the birds return to the abandoned sites after so many years.

Domingos Leitão - Portugal, SPEA



CABO DE GATA SALTPANS

Good partnerships with the salt-producing companies of the saltpans will be key. Universities and local governments are keen to cooperate. This collaboration is crucial to achieve bird-friendly management of the saltpans.

Jorge Oliveira - Spain, SEO



SALINES DE LIXUS

We are working together with local governments and communities to restore these abandoned saltpans. When I am in the area and see the abandoned saltpans overgrown with vegetation, I can't wait to start the work.

Rachida Boussou - Morocco, GREPOM



NETHERLANDS

In 2014 and 2015 Dutch supporters sponsored the regional saltpan project for almost € 130.000,-. This can kick-start restoration and management work in saltpans along the flyway.

Danielle van Oijen - The Netherlands, VBN



SALTPANS ON THE ATLANTIC COAST

In France, there are great examples of well-managed saltpans operated by local cooperatives. This is part of our cultural heritage. We have contributed with our specific bird knowledge and hope to exchange this experience along the flyway.

Dominique Arbert - France, LPO



THYNA SALTPAN

Local people are key! Eco-tourism and educative activities will enable us to involve and empower the local population around the Thyna saltpan to change their view on this wetland and their attitudes towards it.

Claude Fellouzi-Artztel - Tunisia, AAO





Puerto Real



Balbanera
saltpan



Resultado final Balbanera





DIVERSIFICACIÓN DE ACTIVIDADES EN Salinas tradicionales y Esteros



- 1º agri y acuicultura, sal, algas
- 2º Industria agroalimentaria
- 3º Servicios, turismo, comercio.
- 4º Investigación & tecnología
- 5º Educación, salud y cultura

A battle for nature

In 1823 a small group of Spaniards - outnumbered by 15 to one - stood their ground as 30,000 French soldiers invaded Cadiz's Tercera Island. Over 1,000 were captured and 150 killed as King Ferdinand VII's troops marched on Seville.

Today, almost two centuries later, a new war is underway to save Tercera's embattled ecosystem, and it's one the Spanish seem to be winning. Their target is to bring the bird-like back to the stunning La Cava de San Pedro at the centre of the Gibraltar-side island.

There may be no soldiers bearing arms this time, but the odds are just as unevenly stacked. And an unexpected trio of local celebrities have been conscripted to the frontline at this new war against the destructive forces of man and nature: sculptor Javier Ayres, flamenco dancer singer Clara Montes and two-star Michelin Chef Angel Leon, aka The Chef of the Sea.

They are all founder members of Sabate, a non-profit NGO dedicated to the recovery and preservation of La Cava de San Pedro.

All three have close connections to this forgotten natural paradise, and a passion to see it restored to its natural glory.

Clara Montes is a top recording artist from the Cadiz area. Javier Ayres has a studio in nearby Cabo de Trafalgar and specialises in natural sculptures.

Angel Leon, of Puerto de Santa Maria's world-famous seafood restaurant Apuntes, needs no introduction.

They are working with a team of dedicated ecologists and the crowdfunding platform Verkami.com to save these extraordinary salt flats and their

Once a war zone, today an ecological battle ground - Rob Horgan discovers why a singer, a sculptor and a Michelin-starred chef are fighting to turn an island in the Bay of Cadiz into a bird-watching paradise



ON THE UP: Ospreys, spoonbills (top) and flamingos are flocking back to Tercera Island

runes for top quality birding hideaways. Sabate, apocryphal and volunteer Ceballos Pousall told me when I visited this little-known water world. "We have to be able to offer them the same experience but at a fraction of the cost."

But human and natural forces are not the only ones at work here. The island is a natural

habitat using the wetlands as an ideal whirling water bird sheltered by the rocky coastline, once a haven for wildlife.

Rendered for salt throughout the 1950s and 60s, the salt pan was abandoned when modernisation ended the need for traditional extraction methods.

But human and natural forces are not the only ones at work here. The island is a natural

habitat using the wetlands as an ideal whirling water bird sheltered by the rocky coastline, once a haven for wildlife.

Rendered for salt throughout the 1950s and 60s, the salt pan was abandoned when modernisation ended the need for traditional extraction methods.

But human and natural forces are not the only ones at work here. The island is a natural



then decided that an NGO running it was the way to go. Backed by renowned ecologists and supported by many leading local firms, the island is being raised back to life and the birds are returning.

The salt pan is now one of a small number of places where non-saltwater breeding areas of a new species of osprey has returned to the Bay of Cádiz National Park. "It is incredible to see," enthused Sabate's lead ecologist, Juan Martín Bermúdez. "To watch the ospreys coming back here in the spring is a beautiful sight."

In the 1950s and 70s, ospreys migrated here to breed. More recently they have only been found to breed in the wild in northern Europe, but last year they came back home and it is our aim to encourage even more.

Bermúdez set up Sabate in March 2012. Originally from Málaga, he previously managed the Andalusian network of Metropolitan Parks in his role at the Andalusian Public Land Company.

During our afternoon together



High-flying backers

Chef of the sea

"My love of fishing came first and one passion led to another," says Angel Leon of Apuntes, the only two-Michelin-star restaurant in Cadiz. A Gaditano from and first, he's equally passionate about his home province and is its top ambassador, astounding foodies the world over with his experimental fish dishes, caught from the ocean on his doorstep.



Eco artist

CANTABRIAN sculptor Javier Ayres takes his inspiration from nature, wildlife and the stunning scenery around his adopted home in Cabo de Trafalgar. He works in everything from marble and bronze to stone and driftwood picked up from his local beach.



Vocal backer

FLAMENCO fusion singer Clara Montes was born in Madrid and began her career playing the capital's hip cabaret-circuit. But her heart lies in Cadiz, where her family has roots. Today the Atlantic ocean lures by her beloved ocean where the soothing sound of the waves inspires many of her compositions.



AVIAN PARADISE: Flamingos and (right) spoonbills while (below) fishermen keep the water level in check

It was clear to see his passion for nature and learning drove to protect other species which have long used La Cava de San Pedro as a breeding ground. From spoonbills to flamingos, the island is home to 34 different

water species.

For the last year, Bermúdez and his team have worked tirelessly with local fishermen to maintain the island and protect it from pollution. Their main enemy is the daily fight against the tide.

Rising and falling four times a day, high tide cuts the island off from the outside world and can only be accessed for short periods.

They have built a 10-metre flood barrier to stop excess water coming in, and a series of gates to allow it to escape.

A pact with local fishermen allows them to harvest the waters, rich in shrimp and shellfish, in return for controlling water levels on a day-to-day basis.

Affectionately nicknamed the 'machos' (week heros), brothers Juan and Ricardo Ariza Urada have assumed this important role, and they have eight other brothers to call on - all fishermen. The Ariza family has worked in the waters surrounding La Cava de San Pedro for decades, if not centuries.

When they spot anything they report it to Bermúdez who relays the information to the Andalusian government weekly.

The number of birds, their date of arrival and departure and the day they start breeding are all noted down in a meticulous effort to demonstrate the benefits of conserving the island.

But it is not just birds that put it at risk. A large area of rubbish washed up from local beaches is suffocating the sea grass on the

To watch the ospreys coming back here in the spring is a beautiful sight

western side of La Cava de San Pedro, a real veritable of random times.

Bermúdez is arranging a cleanup operation this summer but accepts it is a difficult task.

"When someone throws a packet of crisps or a beer bottle in the sea they don't realise where it goes," he says. "It comes here and ruins our island."

Equally, boats using weathered shipping lanes close to the island threaten the equilibrium.

"Last year I was watching the birds from the shore," Bermúdez explains. "They were happy. I was happy. Then all of sudden they flew up into the sky as if startled by something."

"I took my binoculars down and there I saw a small boat passing right by them."

"I couldn't believe it. I ran over to the boat and shouted. People don't even realise that this is protected land. It is as much about educating people as it is anything else."

One way Bermúdez hopes to raise awareness of La Cava de San Pedro and share his dream with local fishermen.

Last month, a jolly and a viewing platform was installed and the first small boat tour has been conducted. Plans are in motion to construct a walkway and open the island to local bird-watching this summer.

"The main job is finished and although we need to continue



our work, we also want to show off the island, to offer people the chance to come over for the day and see our little piece of paradise," said Bermúdez.

"The main aim of the project has been restoration for scientific purposes, the second aim is the tourism it may bring."

The plan is to promote the island as a bird-watching paradise and to run day trips for tourists visiting Cadiz.

The team has even salvaged

a small fishing boat - originally used to bring 80 migrants from Africa to Spain (now they all fled it, I have no idea) - to take tourists to the island from nearby Puerto Real.

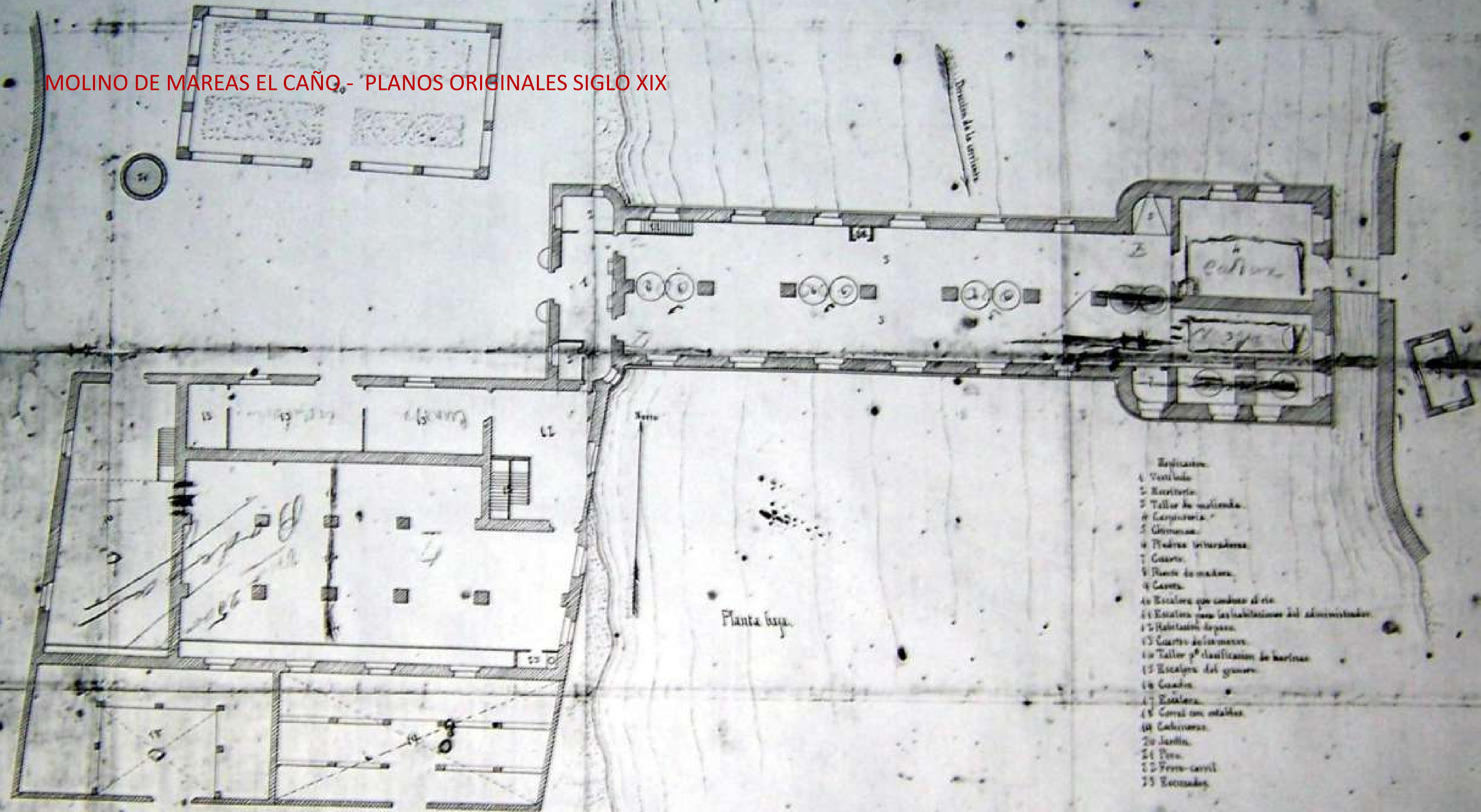
The defence strategy on Tercera seems to be working. The birds are returning to this forgotten island and now the tourists can have their too.

Further information, www.sabate.org

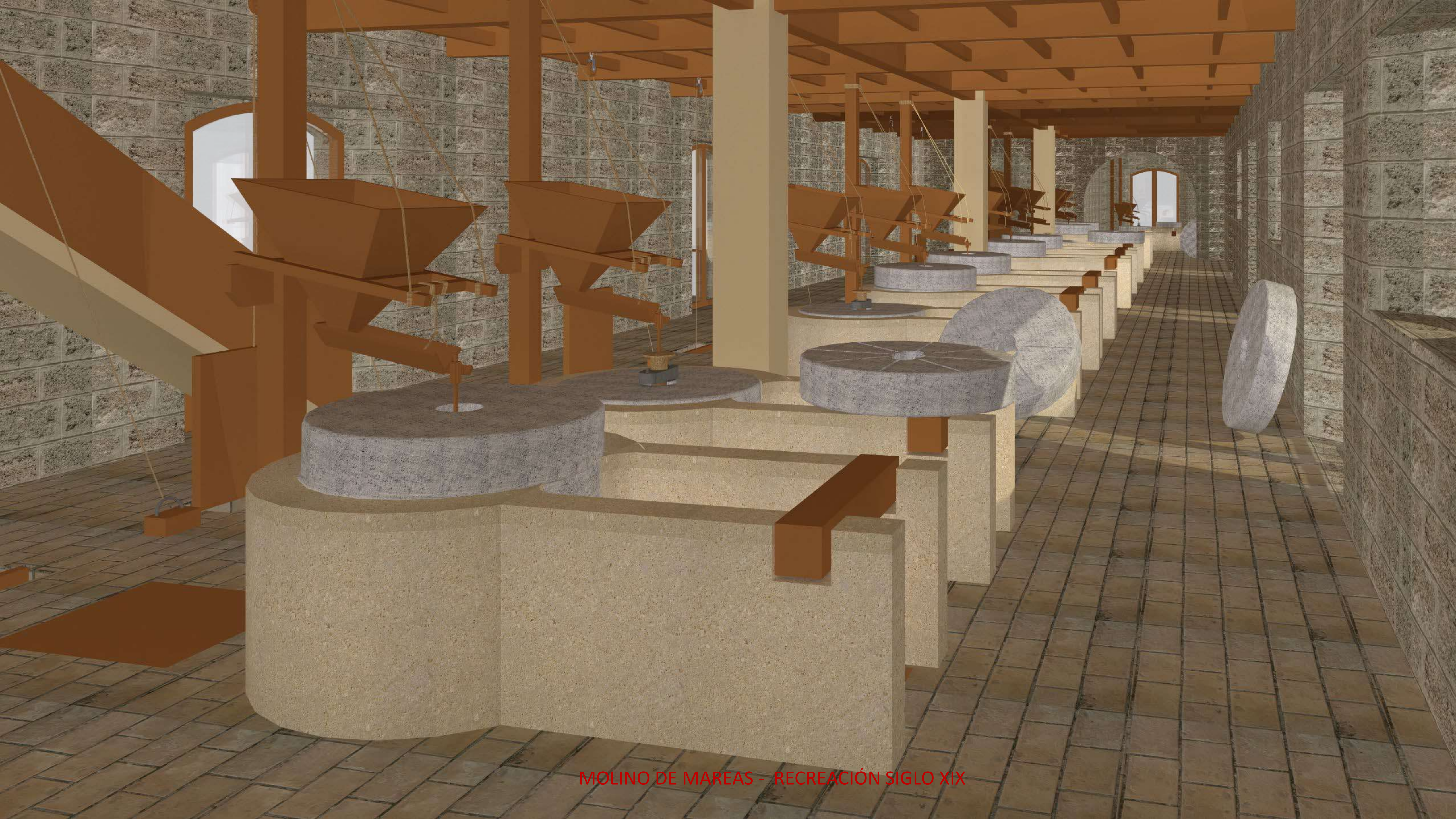


ECO-WARRIORS: Olive Press' Rob Horgan and Miriam Moreno with Sabate's Deborah Powell and Juan Bermúdez

MOLINO DE MAREAS EL CAÑO - PLANOS ORIGINALES SIGLO XIX



- Relaciones.
- 1 Vestibulo
 - 2 Escritorio
 - 3 Taller de molinero
 - 4 Carpinteria
 - 5 Chimenea
 - 6 Paredes laterales
 - 7 Cuarto
 - 8 Pared de madera
 - 9 Cocina
 - 10 Escalera que conduce al rio
 - 11 Escalera para las habitaciones del administrador
 - 12 Habitaciones de paso
 - 13 Cuarto de los mares
 - 14 Taller p^o clasificacion de harinas
 - 15 Escalera del granero
 - 16 Cuadra
 - 17 Establos
 - 18 Corral con establos
 - 19 Cochera
 - 20 Jardin
 - 21 Pasa
 - 22 Ferra-caril
 - 23 Escuderos



MOLINO DE MAREAS - RECREACIÓN SIGLO XIX

