

The AIVP Days

Dublin - Ireland
28 - 30 May 2015

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General Assembly
and the AIVP Days

“Working Waterfront”: a City-Port mix in progress

In partnership with:



PANEL 4: WORKING WATERFRONT, A SPACE FOR GREEN INNOVATIONS

Friday, 29 May 2015 - 11:30 - 13:00

Phd (DEA) Environmental Engineering, Master's Degree in Environmental Science, with additional training in Environmental Management Systems, Audits, languages and specific applications.

I am specialized in environmental management in the port-industry sector where I have been developing my functions since 2004, specifically for the Departments and Areas of Port Operations, Infrastructures, Port Public Domain, and Strategy in the Port Authority of Huelva, the largest Port in Spain.

I have developed and worked on projects related to environmental monitoring, the monitoring of air quality, spills, pollution of soils and projects waste management, environmental and landscape restoration, and pollution prevention.

I have also conducted monitoring environmental impacts and aspects related to port operations, construction of major infrastructure, port facilities - Industrial located in the Port of Huelva, as well as managing the Port Public Domain.

The intervention in the management of environmental incidents, the managing of the environmental risks and the development of manuals, procedures and work instructions for environmental management system, are also important issues developed in the Port of Huelva. Many of these projects have been published and exhibited in various national congresses.



Rocío LOPEZ PICON

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Huelva, España**



**RESTAURATION ECOLOGIQUE
DANS LE PORT DE HUELVA**

La ville de Huelva est située dans l'estuaire des rivières Tinto et Odiel. Son développement urbain est concentré le long de la rive gauche de l'Odiel, où les infrastructures du port intérieur ainsi que les installations d'un important complexe chimique industriel sont implantées depuis les années 1960. Cette rive gauche de l'Odiel fait partie de la zone de desserte du port de Huelva et se compose de marais, de dunes et de plages qui ont souffert de grave dégradation environnementale suite à l'industrialisation.

Pour restaurer la qualité de l'environnement et promouvoir l'utilisation sociale et l'intégration du port dans la ville de Huelva, l'administration portuaire de Huelva a engagé diverses actions de restauration sociale et écologique d'un secteur de cinq kilomètres sur la rive gauche de l'Odiel. Ces actions sont : la restauration environnementale sur plus de quatre kilomètres des marais, des dunes et des plages endommagés, ainsi que la création d'une promenade sur berge d'un kilomètre dans les marais les plus dégradés qui sont plus proches de la ville de Huelva. Les objectifs du projet étaient les suivants:

- la diversification et la conservation des habitats protégés et des espèces de haut intérêt écologique, inscrites sur certaines des listes rouges européennes;
- l'amélioration des ressources naturelles du secteur ;
- l'amélioration et la diversification de la fonctionnalité des marais grâce à la construction d'une infrastructure adjacente qui passe au-dessus des marais et relie la ville de Huelva et le port ;
- la stabilisation et la restauration du marais ;



**ECOLOGICAL RESTORATION IN
THE PORT OF HUELVA**

The city of Huelva is located on the estuary of the rivers Tinto and Odiel. Its urban development is concentrated along the left bank of the river Odiel, where the infrastructure of the Inner Harbor is located, as well as facilities of an important basic chemical industrial complex settled since the 1960s. This left bank of the Odiel river forms part of the Service Area of the Port of Huelva, and consists of marshes, dunes and river beaches that since the industrialization have suffered serious environmental degradation.

In order to environmentally restore the area and to promote the social use and the integration of the Harbour in the city of Huelva, the Port Authority of Huelva is undertaking various actions of social and ecological restoration in a stretch of five kilometers on the left bank of the river Odiel. Such actions are: the environmental restoration of marshes, dunes and beaches deteriorated over four kilometers, and the creation of a riverwalk of one kilometer in the most deteriorated marshes which are closer to the city of Huelva. The goals of the project have been the following:

- Diversification and conservation of protected habitats and species of high environmental interest, included on some European red lists.
 - Enhancement of the natural resources of the area.
 - Improvement and diversification in the functionality of the marshes due to the construction of an infrastructure adjacent to and above the marshes that connects the city of Huelva and the Port.
 - Stabilization and restoration of the marshes.
 - Erosion control in areas of low marsh.
 - Environmental information.
- After environmental monitoring studies, it is possible to show that the project



**RESTAURACIÓN ECOLÓGICA EN
EL PUERTO DE HUELVA**

La ciudad de Huelva está situada en el estuario de los ríos Tinto y Odiel. Su desarrollo urbano se concentra a lo largo de la margen izquierda del río Odiel, donde se encuentra la infraestructura del Puerto Interior, así como las instalaciones de un importante complejo industrial químico básico establecido desde 1960. Esta margen izquierda del río Odiel forma parte de la Zona de Servicio del Puerto de Huelva, y consta de marismas, dunas y playas fluviales que desde la industrialización han sufrido una grave degradación ambiental.

Con el fin de restablecer valores de calidad ambiental en la zona y promover el uso social y la integración del Puerto en la ciudad de Huelva, la Autoridad Portuaria de Huelva está llevando a cabo diversas acciones de restauración ecológica y social en un tramo de cinco kilómetros en la orilla izquierda del río Odiel. Tales acciones son: la restauración ambiental de las marismas, dunas y playas deterioradas más de cuatro kilómetros, y la creación de un paseo del río de un kilómetro en los pantanos más deterioradas que están más cerca de la ciudad de Huelva. Los objetivos del proyecto han sido los siguientes:

- La diversificación y la conservación de los hábitats y especies de alto interés ambiental protegidas, incluidas en algunas listas rojas europeas.
- a mejora de los recursos naturales de la zona.
- La mejora y diversificación de la funcionalidad de las marismas debido a la construcción de una infraestructura adyacente que discurre por encima de las marismas que conecta la ciudad de Huelva y el Puerto.
- La estabilización y restauración de las marismas.

- le contrôle de l'érosion dans certaines parties de la zone de bas marais ;
- la divulgation des informations environnementales et le soutien à l'éducation des citoyens à l'environnement.

Suite à la réalisation d'études de surveillance environnementale, il est possible de démontrer que le projet a permis de récupérer avec succès à la fois les fonctions écologiques des écosystèmes de zones humides, et l'afflux de la population et des touristes dans ce secteur. Le budget du projet était de € 27 millions.

has recovered with great success both, the ecological functions of the marsh ecosystem and the influx of citizens and tourist to the area. The project budget was 27 million €.

- El control de la erosión en zonas de la zona de marisma baja.

- Divulgar información ambiental y fomentar la educación ambiental para la ciudadanía.

Tras la ejecución de estudios de monitoreo ambiental, es posible demostrar que el proyecto se ha recuperado con gran éxito tanto las funciones ecológicas del ecosistema de los pantanos, como la afluencia de ciudadanos y turistas a la zona. El presupuesto del proyecto ha sido de 27 millones de €.



Authorities, ladies and gentlemen, good morning.

First of all, I would like to thank the AIVP for allowing me to be here and for for considering our project interesting enough to be presented at this important event.



PORT OF HUELVA GENERAL INTRODUCTION

Let me begin with a brief introduction of the Port of Huelva.

History

- ✓ **Historical civilizations.**
- ✓ **Christopher Columbus. Discovery of America.**
- ✓ **Mining.**

The history of the Port of Huelva, has marked the history of Huelva, its citizens and its development.

Huelva and its port were referring to historical civilizations like the Tartessos, Phoenicians and Romans.

In addition, Christopher Columbus set sail from Huelva in 1492 on his epic journey to the Americas.

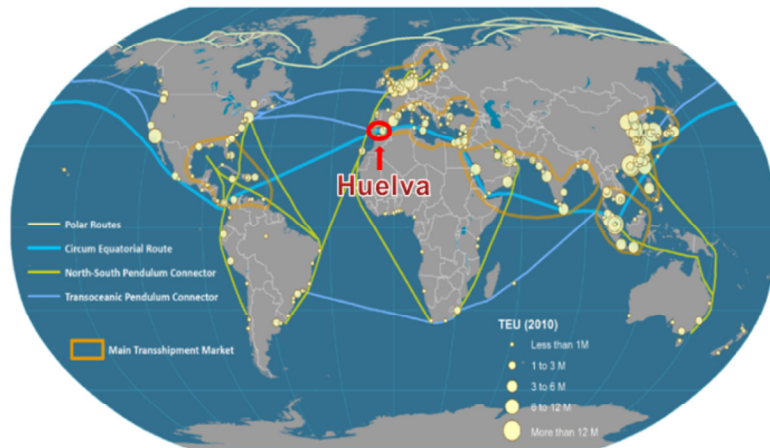
Moreover, the mining historical tradition has been key to the development of the port and its first major infrastructure, such as Rio Tinto's Wharf, currently preserved as historical monuments. It has also become, in the symbol of Huelva.

All this is therefore the identity, not only for the Port of Huelva, but also for the city and its citizens



Position

- ✓ Located in the southwest of Spain under 150 nautical miles from the Strait of Gibraltar.
- ✓ In the heart of main global maritime shipping routes.

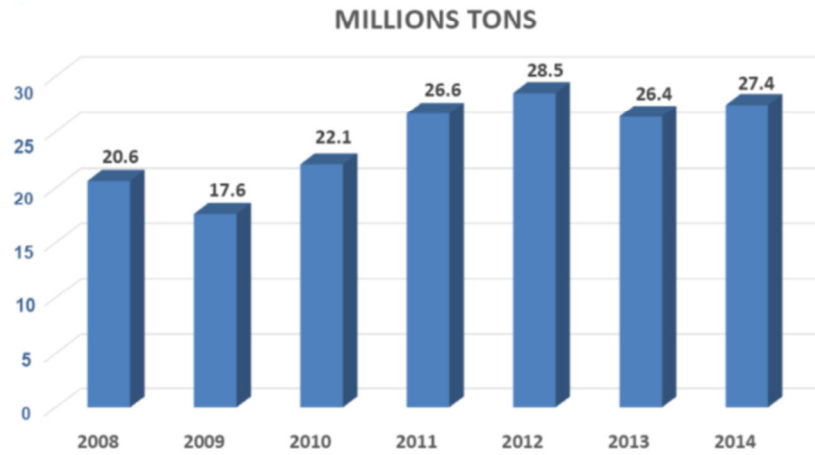


The Port of Huelva is located in the southwest of Spain less than 150 nautical miles from the Strait of Gibraltar.

In the heart of main global maritime and shipping routes.



Traffic Statistics



In recent years, the annual movement of goods has exceeded 28 millions of tons, which positions the Port of Huelva in seventh place in the ranking of the 28 Ports Authorities of Spain, and third place in the ranking of liquid bulks.



Port Area

Area of protected waters: 1120 Ha.

Land area: 1700 Ha.



Related to the Port Area, it is important to say that the Port of Huelva is the largest Port Area in Spain.

The land area is 1700 Hectares and the area of protected waters is 1120 Hectares.



ENVIRONMENTAL VALUES

Now I will like to explain the environmental context of the Port of Huelva.



The Port of Huelva is located in the estuary of the Tinto and Odiel rivers, an area where coexist one of the major industrial centers of Spain, annex to more than 12.000 hectares of protected areas of marshes which are considered:

- Natural Park.
- Biosphere Reserve (UNESCO).
- Areas of the Natura 2000 Network.
- Site of international importance for migratory waders.
- Natural habitats for wild protected of fauna and flora.
- Important Bird Areas in the marine environment, marine IBAs (of SEO Birdlife).
- RAMSAR areas.

Therefore, as you can imagine, sustainability as a strategic pillar of our policy, and it is essential to combine economic, social and environmental interests for everyone's benefit.



ECOLOGICAL RESTORATION & GREEN INNOVATIONS FOR PORT-CITY INTEGRATION

I am going to explain the project which has been developed.



The Project

- ✓ Inner Port.
- ✓ 5 km.
- ✓ 26 Mill. Euros.



Historically, the marshes located in the Port Area were used by citizens for social and economic uses. However, since the 1960s this area has suffered serious environmental degradation due to industrialization.

So, almost 50 years later, in order to environmentally restore the area and to promote the social use and the integration of the Harbour in the city of Huelva, the Port Authority of Huelva decided to develop this project.

The restored area is located in the Inner Harbour, near the city and close to the chemical industrial complex.

The project consists of two phases:

1. Environmental restoration of a four kilometer stretch of marshes, dunes and beach. This first phase is fully operational.
2. The construction of a 1 km river-walk in an area of bare mud which was completely damaged. This phase is currently being implemented.

Both of them form a linear structure of 5 km attached to the city what allows the connectivity and integration between the City and the Port.

The project budget is 26 million Euros.

Finally it is important to say that this investment is not for Port infrastructures. In this sense, the Port Authority of Huelva implementation of the "Ecological restoration" project, demonstrates its commitment to the environment and to improving the quality of life of the citizens of Huelva.



Environmental Issues to Solve

- ✓ Landscape degradation and break connection between the Port and the city.
- ✓ The existence of marshes devoid of vegetation.
- ✓ Invasion of “spartina densiflora”.
- ✓ High erosion rates.
- ✓ Conservation needs of endangered species.



To develop this project, we had to face up different problems:

- ✓ Landscape degradation and break connection between the Port and the city.
- ✓ Existence of marshes devoid of vegetation.
- ✓ Invasion of “spartina densiflora”.
- ✓ High erosion rates.
- ✓ Conservation needs of endangered species.



Aims of the Project

- ✓ Recovery of degraded areas for Port-city integration and social use.
- ✓ Promotion of environmental education and divulgation.
- ✓ Improve environmental and landscape quality applying biotools.
- ✓ Diversification and conservation of protected habitats and species of high environmental interest.
- ✓ Enhancement of the natural resources of the area.
- ✓ Improvement and diversification of the ecological functions of marshes.
- ✓ Stabilization of marshes.
- ✓ Erosion control in areas of low marsh.



Actions Developed

- ✓ Removing of "spartina densiflora".



- ✓ Planting "spartina marítima."



- ✓ Planting "zostera noltii".



In order to comply the aims, we had to develop different actions, such as:

- ✓ Removing of "spartina densiflora".
- ✓ Planting "spartina marítima."
- ✓ Planting "zostera noltii".



Actions Developed

✓ Creating dunes.

✓ Installing of bird perches.

✓ Installing breakwater.





Actions Developed

- ✓ Planting species in dunes.



- ✓ Creating paths footbridge and cycleways.



- ✓ Installing panels of environmental information.





Actions Developed

- ✓ Restoration of "Punta del Sebo" beach.
- ✓ Restoration of "Punta del Sebo" recreational area.
- ✓ Construction of a 1 km River-walk.





Outcomes

✓ Consolidation of marshes.



✓ Diversification of habitats.

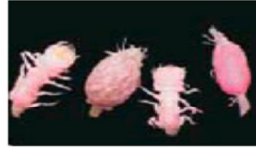


✓ CO₂ capture. 600 Tn.



Outcomes

- ✓ Proliferation of invertebrate species.



- ✓ Proliferation of fish.



- ✓ Areas for feeding and resting of protected birds.





Outcomes

- ✓ Landscape improvement and environmental quality.





Conclusions

- ✓ The project is an example of a successful Port-City integration.



The Port of Huelva is very proud of the project developed because we consider it is an example of a successful Port-City integration.

As a consequence of these results, a healthy environment has been successfully created and it has been possible to restore an area historically used by the citizens of Huelva, which due to industrialization, was damaged for more than 40 years ago.

Currently, the citizens use the area daily for the development of social and sports activities.

The last picture was taken a month ago, and here we can see that the river walk is almost finished, so it will be available to the citizens this summer.



Conclusions

- ✓ The environmental, social and economic sustainability of port activity is not an option, it is the way forward.





Conclusions

- ✓ Adaptation of wildlife and birds to restored areas is extremely quick and productive.



The adaptation of wildlife and birds to restored areas is extremely quick and productive.

It has even been an excellent adaptation of protected species to the ecological restoration.



Conclusions

- ✓ Colonization of plants is also very quick and productive.



Colonization of plants is also very quick and productive.

Planting and subsequent development of grassland "spartina marítima" was a success.

Plants of "maritime Spartina" have grown and covered the bare mud creating meadows in the marshes.

As we can see in the picture, the landscape improvement has been a success because now there are grasslands where there was only bare mud



Conclusions

- ✓ It is possible to combine industrial development with environmental protection.



- ✓ It is possible to combine industrial development with environmental protection.

Any damaged area is liable to be recovered.



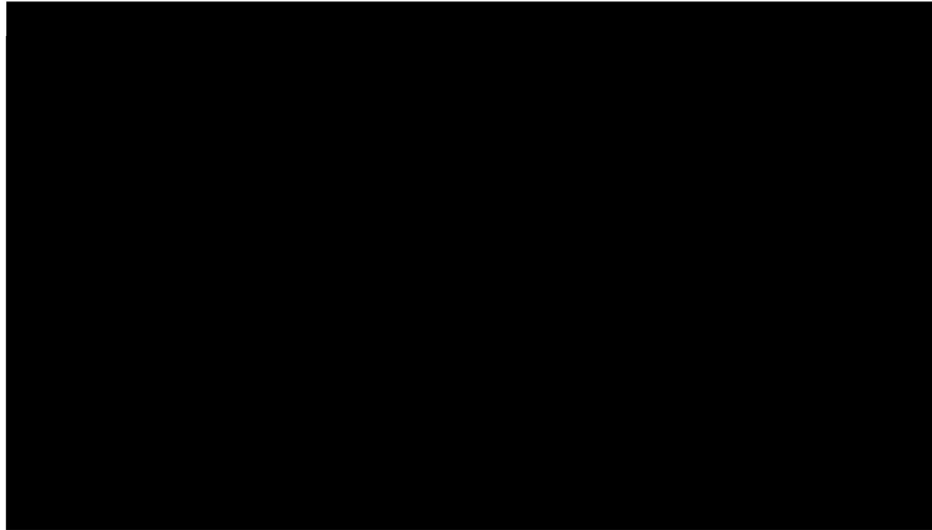
Conclusions

- ✓ Recovery of historical social uses, has made the citizens feel part of the project and part of their Port.





Video



Now, to demonstrate the above, allow me show this short video we made just a few months ago when our project was shortlisted for ESPO to the annual awards.

I hope you enjoy it.



IT WOULD BE A PLEASURE THAT YOU VISIT US!

THANK YOU FOR YOUR ATTENTION



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