DOÑANA

A WWF *One* Europe, *More* Nature *Pilot Project* Site

Doñana is one of the world's most important nature areas and WWF was founded there in the 1960s in order to conserve its biodiversity for future generations. WWF-Spain celebrates its 40th anniversary in 2009 and in that time many conservation successes have been achieved in this region. Yet the impact of agriculture upon the wetlands and surrounding forests, rivers and streams grew steadily throughout the 1980s and 1990s, prompting One Europe More Nature to form an innovative partnership with farmers, local authorities and supermarkets to reduce the impact of strawberry farming.

This is being achieved in two ways: through reducing the water consumption of irrigated agriculture and through the relocation of farms to open up biodiversity corridors for the area's abundant wildlife.

About the Project Area

Location
Doñana is located where the Guadalquivir River – one of Spain's biggest – reaches the Atlantic Ocean, south and west of Sevilla in Andalusia. More than 100,000 ha of wetland, dune, beach and Mediterranean forest complex is protected as a National Park and Nature Park, and the natural treasures are recognized as being of international importance through its designation as a Ramsar Site (wetland), UNESCO World Heritage Site and Biosphere Reserve. Surrounding the parks, however, is an intensive belt of irrigated agriculture, settlements and roads.

Significant landscapes, habitats and species
Doñana is noted for its rich mosaic habitats which are home to hundreds of species of plant, insect, mammal and bird. As many as six million migratory birds stop off en route between Africa and Europe each year, and well-known and rare species include the Imperial Eagle and Iberian Lynx, the most endangered cat species in the world.

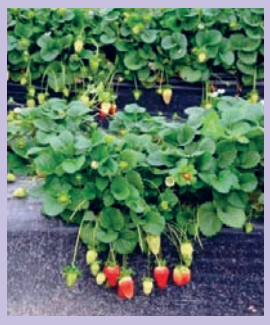
875 species of plant and 226 species of bird are found here, the latter including the Spoonbill, Greater Flamingo, Glossy Ibis and Avocet. The number of birds is simply immense: 60,000 Greylag Geese winter and breed here and as a result the area is a magnet for bird-watchers and other nature-loving tourists.

Human presence
The nearby cities of Sevilla and Huelva, with a population of 725,000 and 145,000 respectively, dominate the area's economic landscape, while the 14 municipalities of the Doñana area, with a total population of about 200,000, have their own economic structure based on farming and tourism. Matalascanas, for example, is a popular seaside holiday resort, whilst the tiny, picturesque village of El Rocio, in the heart of the marshes, is the destination for one of Spain's largest annual pilgrimages in Pentecost, during which time over one million people converge on the region.

Economic status
Agriculture: Since the 1980s, irrigated strawberry production around Doñana has boomed. Traditional, family farms of mixed crops (e.g. olives, vines, cereals) have been largely replaced by a monoculture of plastic-sheeted, intensively irrigated fruit-producing complexes. Farms from the region produce 200,000 tons of strawberries every year, which account for 60% of the strawberry production of Spain; half of the production goes for export and ends up in the shelves of supermarkets in Germany, France, UK, Switzerland and the Netherlands. In fact, more than 90% of winter strawberries in Europe come from here.

Today, more than 5,000 hectares are under strawberry cultivation, contributing more than 250 million Euros to the Spanish economy annually. The cost in water is immense: estimates put the entire water use of the berries at approximately 20 million cubic metres per year, equivalent to 10% of the annual recharge needs of the underlying aquifer upon which the marshes and all the biodiversity depend.

Problems



Agriculture: There are both hydrological and spatial problems associated with agriculture in Doñana. Due to the non-regulated (and often illegal) abstraction of groundwater for strawberry farming, the underground aquifer is showing signs of water depletion. Evidence also shows that surface run-off is decreasing and, for example, the main feeder tributary for the marshes in the summer, La Rocina, has lost 50% of its flow in the last three decades. Such losses, in an already water-scarce part of Europe, are very significant.

Depending on how those strawberries are farmed, the crop can have a bigger or smaller impact on nature. "Business as usual" during the last 25 years has led to the illegal occupation of more than 2,100 hectares of public forest, the illegal water abstraction through 1,000 boreholes distributed all over the Rocina river basin, and farming practices that can be much improved.

The impact of agriculture and its associated infrastructure on the landscape itself is equally alarming. At least 35 kilometres of river bed have been occupied by farming. The access roads, fences and farms themselves – which require thousands of square metres of plastic tenting – have eaten up the former forest lands and fragmented all habitats to such an extent that wildlife corridors have been destroyed threatening the long-term conservation of the National Park's valuable biodiversity. 5,000 metric tons of plastic sheeting are used annually and much of this can be seen in informal dumps and strewn across the forests and beside the roads.

In short, there is much that could be improved. So WWF set out to engage with farmers, and with regional authorities, to try to work out a set of solutions which would be good for nature, but also good for local people and business.

Solutions and Results

In 2003, and as noted above, following on from many years of work in the region, WWF-Spain began to consult with farmers, distributors, technicians and others related to the strawberry industry. Discussions intensified with local authorities around the region, the Andalusian Government and national authorities. It appeared that all of the players wanted to find a way to harmonise the (up until then) seemingly conflicting demands for water and land around Doñana.

Careful research, opinion polling and detailed consultations began to build up the information, understanding (and trust) required to work out a joint solution. At the same time, other WWF offices around Europe – notably in the Netherlands, Switzerland and Germany – began to discuss the strawberry issue with supermarkets in their own countries, and before long, a farmer-agreed set of proposals was being adopted by the large buyers of winter strawberries. These proposals related to the legality of land and water used in production, the amount of water used, the management of biodiversity inside the farms and the location of farms (whether inside or outside the identified biodiversity corridors).

WWF needed to prove that the proposed changes would work, prompting them to invest into pilot projects with partner farmers which demonstrated new water-efficient irrigation technologies. Initial trials over the 2006 season showed that approximately 20% less water could be used with no impact on either quality or quantity. In fact, farmers would save three-fold: first by using less water, second by using less fertilizers and finally by using less electricity or petrol to pump that water, which in fact is a major cost associated with irrigation.

Changes to the supermarket's purchasing protocols were therefore agreed to, and in 2007, the first "more sustainable" strawberries appeared on the supermarket shelves. These strawberries are not yet "perfect" from the environmental point of view, but a start has been made and momentum is gathering every year.

At the same time, the Government of Andalusia adopted and passed a "Biodiversity Corridors Vision" which foresees the opening up of three migration routes for animals through the strawberry belt. It is also working with local municipalities to begin the re-location process. Ultimately, this will offer safe passage to – for example – the river otter or the threatened Iberian Lynx.

There are many challenges ahead, and the road will be undoubtedly long and hard, but a start has been made, and after more than 20 years of decline, there is now great hope amongst all stakeholders that the marriage of business and nature will lead to a more sustainable future for all of the inhabitants of the region: humans as well as birds and animals.

Project Magnification

The project successes are now increasingly considered as a model for business/nature mechanisms, and WWF has plans to extend the approach and lessons to elsewhere in the Mediterranean and beyond. Strawberry farming is expanding across the sea in Morocco, for example, and since 2007 WWF has begun investigating how to engage with farmers and others in the Moroccan region bordering Merja Zerga, itself a wetland of international importance, located between Rabat and Tangier on the Atlantic coast.

At the same time, WWF wants to extend the improvements in the partner strawberry farms to other farms and crops. For that purpose, WWF is working to include its innovative criteria in already existing quality protocols for fruits and vegetables, extended all over Europe, and even in organic farming.

OEMN Mission

WWF's One Europe More Nature (OEMN) project uses an innovative approach to forge unusual partnerships so that business and nature can co-exist. Its mechanisms lead to win-win solutions for all, allowing Europe's rural workers to make incomes from the countryside while protecting nature. OEMN, tested at many pilot rural locations throughout Europe, is now mainstreaming conservation into everyday European business life.

Other WWF OEMN pilot project sites

Prespa (Albania, Former Yugoslav Republic of Macedonia, Greece), Väinameri (Estonia), Tisza Floodplains (Hungary), Merja Zerga (Morocco), Gelderse Poort (Netherlands), Maramures (Romania), Sinca Noua (Romania)

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www.panda.org/europe/oemn

PHOTO CREDITS

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