## Toxic waste devastates marshlands in southern Spain

Vicky Short 13 May 1998

An ecological disaster began on April 25 in Andalucia, the southwest region of Spain. A dyke wall gave way at a reservoir, owned by the mining company Boliden Ltd., used for dumping poisonous chemicals. The contents—five million cubic metres of acidic waste water—poured into the surrounding area adjoining Europe's biggest natural park, the Coto de Donana.

The 50-metre breach in the dyke wall released a massive wave of toxic waste, with a front 500 metres long. It flattened and killed everything in its path as it flowed into the River Guadimar at a speed of 1 km per hour. The wave moved downstream in rivers and manmade channels to the Gulf of Cadiz. Nothing could survive because of the high acidity of the waste, which contained a mixture of lead, copper, zinc, cadmium and other metals, along with sulphides. Lawrence Rose, of the Royal Society for the Protection of Birds in Britain, said the acidity of the spillage was somewhere between malt vinegar and sulphuric acid and it had killed all the vegetation along the river banks. There are fears that the river itself will never recover.

Environmental organisations said that it was a disaster that had been waiting to happen. The reservoir was built by Los Frailes mine in Aznarcollar, in the province of Seville, to empty its toxic waste. A spokesman from Spain's Defence Association said: "The mine was a time bomb." Its owner, Boliden Ltd., is a Toronto-based company that moved to Canada from Sweden 14 months ago. In its first year of operation, 1997, the mine produced 180,000 tonnes of zinc, lead, copper and silver from 4 million tonnes of ore.

The poisonous spillage poses a grave threat to the Coto de Do—ana, which is home to a quarter of a million nesting birds. Some 125 different bird species, including some of the last remaining Spanish imperial

eagles (the 15 pairs resident in the park represent 10 percent of the global population) live there.

Coto de Donana covers some 185,000 acres of warm, marshy swamp that provides refuge for 250 species of birds as they fly on the migratory route between Europe and Africa. Sixty thousand grey lag geese cross Europe to winter in this park, and up to 250,000 ducks. Thousands of little egrets, cattle egrets, night herons, squacco herons, white storks, marbled teal and avocets—birds rare anywhere else in Europe—are nesting or breeding in the area. Flocks of flamingos regularly settle on the marshy banks. All risk extinction as a result of the disaster.

There is as well a long-term threat to the food chain, affecting not only water birds, but also flora, amphibians and reptiles and even the indigenous Iberian lynx. The park is also home to red deer and wild boar.

Do—ana, once a private hunting ground for kings and aristocrats, remained virtually untouched by man until the middle of this century. In the 1960s experts from Britain's Royal Society for the Protection of Birds helped draw up a plan to turn 173,000 acres into the national park. The park was declared protected territory by the Spanish government in 1969 and a World Heritage Site by the United Nations in 1994.

The authorities attempted to divert the poisonous floodwater through canals around the park into the neighbouring River Guadalquivir, in the hope that the fast-flowing river would dilute the waste and flush it out to sea. But even if the toxic waters were to be pushed into the Atlantic, it would still do considerable damage to the park.

Michael Priester of Projekt Konsul, a mining consultancy near Frankfurt that is dealing with the aftermath of a similar accident in Bolivia in 1996, says the flood will have deposited most of its silt onto the land, and with it, unknown quantities of cadmium, mercury, arsenic and other heavy metals. "There is no way to get that material back", he said. "The metals will be bound by soil particles, and then they will leak out slowly into the groundwater, at a rate depending on local acidity and rainfall."

Manuel Repeto, director of a toxicological institute in Seville, said it was likely that the heavy metals in the waste spilt will eventually make their way into food. "The underground aquifers can feed them to plants and these in turn can pass them on to domestic animals and human beings."

By April 29, hundreds of workers had gathered 20 tonnes of dead fish in and around the Donana National Park in an attempt to stop them from being eaten by some of the birds living in the wetlands. In some areas park officers attempted to stop birds eating poisoned fish by shooting into the air.

The catastrophe is not limited to birds and wild life. The human costs will be considerable. More than 500 families work and live in the affected area. In some places the levels of the river Guadiamar reached heights comparable to the floods of 1996 and 1997, bursting its banks and covering large areas of cultivated land next to its riverbeds. Around 12,300 acres of orchards, rice fields and cotton plantations were coated with black mud. Large stretches of tomato, sunflower, olive and grain fields were similarly affected. Farmers' organisations said that the land poisoned by the toxic flood would have to be left fallow for up to 25 years. Fears were expressed that some fields will remain sterile forever. There is also a possibility that the mine will close, with the loss of hundreds of jobs.

Nearly 1,000 small boats are operated by shrimp and eel fishermen in the tourist town of Sanlucar de Barrameda, at the mouth of the River Guadalquivir. They fear that the diverted toxic waste will ultimately leave them without a livelihood.

Homes were evacuated and there were warnings not to drink from wells. Sheep and cattle owners were told to keep livestock away from the river. Tourists in the popular areas of Cadiz, Sevilla and Huelva were told to beware of poisoned foodstuffs. The regional government in Andalucia has been asked by the owners of the mine for permission to release a further 400 million gallons of acid waste into local rivers so they

can mend the dam.

Some of the facts that have emerged clearly reveal the economic considerations that gave rise to this catastrophe. The mine's owners ignored repeated warnings that the dam was unsafe. In 1995, the Andalucia Ecologist and Pacifist Confederation (CEPA) pointed out deficiencies in its construction. On January 20 1996, Manuel Aguilar Campos, an exdirector of Aznalcollar Mines who had participated in the construction of the dam, demanded that the Andalucian government close the reservoir in order to "a natural disaster prevent of incalculable consequences." The company responded by saying the dyke was in line with all of the technical conditions demanded, and only a few "little filterings" has occurred. The government confirmed that the dyke had passed all technical tests.

Boliden Ltd made a statement last week maintaining that a "seismic shift" was responsible for the disaster. However, a local geological institute said it had not recorded any earth movements.

For more than 5 days the cleaning up operation was delayed by attempts of the different parties involved—the regional government of Andalucia, the federal government in Madrid and the mine's owners—to find a scapegoat, as they tried to shift both the onus of guilt and the cost of the clean-up onto someone else.



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