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MINE DISASTER THREATENS SPAIN'S DOÑANA NATIONAL PARK

On April 25, 1998, a dam containing toxic refuse and acidic water from a Spanish mine collapsed, sending almost seven million cubic meters of material into a nearby river and toward Doñana National Park.¹ The mine was owned by Boliden Ltd., a large mining company based in Toronto, Canada. Although most residue from the mine was kept from entering the national park, millions of dollars of crops were destroyed and the future of the park is still in question. Boliden and Spanish regional and national governments are now party to several lawsuits concerning economic, ecological, and public health damages.

A. Doñana National Park

Doñana National Park sits on the southern coast of Spain in the region of Andalucia, between the right bank of the Guadalquivir River and the Atlantic Ocean.² Doñana was first declared a biological reserve in 1965; since then the total protected area has more than doubled to 77,260 hectares,³ almost half of which consists of swamps.⁴ These wetlands flood each winter, creating ideal conditions for the flocks of migrating birds that spend some part of the year in the park.⁵

Doñana first received international recognition when it was named to the UNESCO Man and Biosphere Reserve Programme in 1980.⁶ In 1990, Doñana was included in the *Montreux Record* of Ramsar sites re-

1. Doñana has occupied a place in human history for over 700 years. It was the favorite hunting reserve of several Spanish kings, and the word "Coto," often used in referring to the area, means "hunting reserve." It was owned by the Duchess of Alba and served as the backdrop for her portrait by Goya. See *Descriptions of Natural World Heritage Properties* (last modified Apr. 27, 1998) <http://www.wcmc.org.uk:80/protected_areas/data/wh/donana.html>.

2. See *id.*

3. See *id.*

4. See *id.*

5. See *id.*

6. See *List of the World Network of Biosphere Reserves* (last modified Dec. 4, 1998) <<http://www.unesco.org/mab/brlist.htm>>.

quiring priority attention.⁷ Doñana was added to the UNESCO World Heritage List in 1994.⁸

Each year, approximately 350 species of birds and approximately six million individual birds spend some time in Doñana and the surrounding area. This includes the majority of birds that pass through Europe and an extraordinary number of African visitors.⁹ The park is also a refuge for the threatened Spanish Lynx, the Adalbert's Eagle, and a number of other endangered or rare animals.¹⁰

B. Boliden

The Los Frailes mine¹¹ sits on the Agrio River, just upstream from where the Agrio flows into the Guadiamar River and about fifty kilometers north of Doñana National Park.¹² The Guadiamar flows directly into the national park and into its wetlands. It is the largest source of fresh water for the park, whose wetlands are inundated six months of the year.

Boliden first began its operations in Spain in 1987, when it acquired the Spanish corporation Apirsa.¹³ The principal acquired asset was the Aznalcollar open-pit zinc mine.¹⁴ This mine was depleted by

7. That recommendation concerned most specifically irrigation and urban uses of water in an attempt to ensure that Doñana received the water it required to sustain its ecological character. *See Recommendations of the Montreux Conference: Recommendation C.4.9.1 on Doñana* (visited Jan. 4, 1999) <http://iucn.org/themes/ramsar/key_rec_4.9.1.htm>.

8. *See* United Nations Educational, Scientific and Cultural Organization Convention Concerning the Protection of the World Cultural and Natural Heritage, *Occupational Guidelines for the Implementation of the World Heritage Convention* (visited Jan. 4, 1999) <<http://www.unesco.org/whc/opgutoc.htm>>.

9. *See* *Worldview Spain: Cleanup from Mine Spill Fuels New Enviro Fears*, Dec. 15, 1998, AM. POL. NETWORK (GREENWIRE) at 26; Natural World Heritage Property, *Descriptions of Natural World Heritage Properties* (visited Apr. 4, 1999) <http://www.wcmc.org.uk:80/protected_areas/data/wh/donana.html>.

10. *See* Natural World Heritage Property, *supra* note 9.

11. The mine is frequently referred to as either Aznalcollar or Los Frailes. Aznalcollar is the name of a nearby town and the name of a second nearby mine that played out and was closed in 1996. *See Tailings Spill Shuts Boliden Zinc-Lead Mine*, METALS WK., May 4, 1998, available in 1998 WL 10020745.

12. *See* Marcelo Del Pozo, *Major Disaster Averted as Mining Pond Dam Bursts*, IRISH TIMES, Apr. 27, 1998, available in 1998 WL 6239311.

13. *See Tailings Flood in Spain*, MINING J., May 1, 1988, at 333, available in 1998 WL 9254654.

14. *See id.*

1996, by which time a proven reserve was discovered at Los Frailes, where production began in 1997.¹⁵ The operation employed approximately 500 people.¹⁶ Boliden was listed on the Toronto stock exchange in 1997,¹⁷ although the Swedish corporation Trelleborg AG owns forty-two percent.¹⁸

Before the Los Frailes accident, Anders Bulow, president of Boliden, claimed that the company had been "a model with respect to environmental matters."¹⁹ Bulow stated that Boliden was therefore "very concerned" about the accident.²⁰ The company has been implicated in past environmental violations, however.²¹ In 1994 a formal complaint alleged that unauthorized dumping of toxic waste was occurring at the Los Frailes site.²² Although reports from an independent environmental firm supported the allegations, Boliden still denies the claim.²³

In addition, in November 1995, Manuel Aguilar Campos, an engineer employed by Boliden's Spanish subsidiary, filed a formal complaint with the Andalusian environmental agency.²⁴ Mr. Campos included photographs with his complaint, demonstrating what he alleged to be deficiencies in the construction of a tailings pond dam at Los

15. *See id.*

16. *See id.*

17. *See id.*

18. *See* John Schreiner, *Boliden Faces Lawsuit: Shareholders Sue Over Price Drop Following Dam Burst*, NAT'L POST, Dec. 8, 1998, available in 1998 WL 22955323.

19. *Tailings Dam Ruptures at Spanish Mine*, WATER POWER & DAM CONSTRUCTION, June 30, 1998, at 2.

20. *Id.*

21. In addition to the problems in Spain, Boliden exported 19,500 tons of toxic waste to the Chilean region of Arica 14 years ago. As a result of the waste, half the children in the area developed elevated levels of lead in their blood and run the risk of irreversible neurological damage. Chilean authorities also accused Boliden of shipping cadmium, arsenic, mercury, and lead and claiming that it was silver or gold. Boliden has denied responsibility. The company is further suspected of having polluted the Asajaure Lake in Sweden when a water treatment reservoir burst, releasing zinc and lead. *See Track Record of Pollution for Spanish Waste Spill Culprit*, AGENCE FRANCE-PRESSE, May 2, 1998, available in 1998 WL 2273729.

22. *See* Alan Freeman, *Mining Firm Was Warned of Disaster in Spain*, GLOBE & MAIL, May 1, 1998, at A1, available in WESTLAW, ALLNEWS Database.

23. *See id.*

24. Mr. Campos no longer works for Boliden. A spokesman stated, "I think we fired him. . . . We lost the confidence of this employee." *Id.* Local ecologists claim that Mr. Campos was run out of town by residents afraid that his revelations might threaten the future of the mine and its approximately 500 employees. *See id.*

Frailes,²⁵ and warned that leaks from the dam were rapidly deteriorating the quality of the Guadiamar River.²⁶ He went so far as to claim that the potential existed for a "natural disaster of incalculable consequences."²⁷

Boliden representatives responded to questions about Mr. Campos's allegations by stating that experts had found no problems with the dam.²⁸ In January 1996, however, a visit to the mine by officials of the regional environment laboratory found that a tailings pond was in fact overflowing and dumping its effluent into the Agrio and Guadiamar Rivers.²⁹

25. Tailings dams exist at almost every mine in the world. The dams are generally constructed out of material found at the mine site, and this can vary remarkably in quality. See Alan Robinson & Alan Freeman, *Mining's Dam Problem*, GLOBE & MAIL (Toronto), May 16, 1998, at B1, available in WESTLAW, ALLNEWS Database. The word "tailings" refers to the material that is left over in a mining operation after the desired minerals have been extracted. The tailings pond is a typical storage facility for the unwanted material. Because of the nature of tailings, and their high content of heavy metals, extended contact with atmospheric oxygen causes their transformation into highly toxic and acidic metal oxides. See *id.* To prevent this occurrence, the tailings are contained in the ponds underneath large quantities of water. The water minimizes the materials' contact with oxygen, and therefore prevents the reactions that would form more highly toxic materials. See *id.* The dams, and the ponds that they contain, are often very large. The tailings dam at Los Frailes was over one kilometer across. The dam was originally designed to hold 32.6 million cubic meters of tailings and reach a height of 32 meters. Boliden claims that at the time of the accident, the dam was only 28 meters high, and the dam only contained 15 million cubic meters of tailings. See *Conclusions of the First Aznalcollar Report: The Dam Failure Was Caused by the Slippage of Bedrock at Depth* (last modified Sept. 28, 1988) <<http://www.boliden.se>> [hereinafter *Conclusions of the First Report*]. According to the World Information Service on Energy, there have been 25 major failures of tailings ponds worldwide since 1971. See Robinson & Freeman, *supra*. No one was killed as a result of the Boliden accident, although some were injured by the highly acidic water. But that is not always the case in these kinds of accidents. In 1985, a tailings dam at an Italian fluorite mine broke, and 268 people were killed. In 1974, 12 workers were killed in South Africa; in 1995, 12 more died in the Philippines; 17 people died in South Africa in 1994; 20 died in China in 1988. See *id.*

26. José Antonio Chans, the vice-chairman of the Doñana Biological Station, claimed that experts have feared a disaster in the Guadiamar River for years. Regional and central governments failed to do anything for fear that Boliden might leave and the area would lose 500 jobs. See Freeman, *Mining Firm Was Warned of Disaster in Spain*, *supra* note 22.

27. *Id.* Mr. Campos was concerned with the opening of a new US\$160 million open-pit mine which would double the output and increase the stress on the tailings pond dam, which was used at the old Aznalcollar mine and would continue to be used by the new Los Frailes mine. Los Frailes opened in 1997. See *id.*

28. See *id.*

29. See *id.*

Even more recently, the mayor of the town of Aznalcázar, about twenty kilometers downstream from the mine, wrote Boliden asking for a report about the state of the tailings pond and the possible seepage of waste into the river.³⁰ On March 9, 1998, Boliden responded by saying that any allegations of waste getting into the river were false and that the dam and tailings pond were sound.³¹

C. The Accident

In the early morning hours of Saturday, April 25, 1998,³² the bedrock below the tailings pond dam at Los Frailes shifted.³³ The event and its cause appear to have been unpredictable.³⁴ The one kilometer-long dam responded to the shift when a fifty-meter portion of it gave way. Final estimates indicate that 1.3 million cubic meters of solid waste and

30. *See id.*

31. *See id.*

32. *See Conclusions of the First Report, supra* note 25.

33. *See* Brent Shearer, *Mine Spill Blamed on Bedrock Shift*, AM. METAL MARKET, Oct. 9, 1998, at 5, available in 1998 WL 10090759. On September 28, 1998, the engineering firm, EPTISA, Servicios de Ingeniería, S.A., released a summary of the main conclusions from its investigation of the dam failure. According to EPTISA, the dam failed when "surplus pressure in the interstitial water of the clays and pressures due to the weight of the dam and tailings deposited" caused 60 meters of lateral movement of a 700-meter section of the dam. The slippage occurred in the "Blue Clay" formation at a depth of 14 meters below the original surface topography. The EPTISA report found that this process was not apparently caused by other factors such as seismic activity, blasting, or fluid filtration in the alluvial terrace. According to the study, neither the original 1977 dam construction project by INTECSA/DRAGADOS, nor a 1996 dam stability report and dam lift project were sufficient to ascertain the behavior of the subsoil that caused this accident. Boliden has commissioned a study to determine if either project contained technical errors or omissions. The company will demand compensation for any liability. *See Conclusions of the First Report, supra* note 25. This report will be submitted to the judge who is chairing the investigation of the accident. *See* Shearer, *supra*.

34. This is the claim of Boliden; investigations are underway to determine whether the accident could have been predicted. *See Conclusions of the First Report, supra* note 25. Geocisa, the Spanish engineering and consulting firm that was originally hired by Boliden in 1996 to perform a dam stability report, had also inspected the dam on April 14, 1998, as part of the same contract. That inspection revealed no problems. Geocisa has now been hired by the Andalusian government to determine the disaster's cause, an action for which the government has been harshly criticized. *See* Alan Freeman, *Spanish Toxic-Spill Investigation Called Conflict: Environmental Group Criticizes Decision to Hire Same Engineering Firm That Failed to Predict Collapse to Analyze the Cause*, GLOBE & MAIL (Canada), May 9, 1998, at A21, available in WESTLAW, ALLNEWS Database.

5.5 million cubic meters of highly acidic water were dumped into the Agrio River.³⁵

Responses to the incident were varied in both intensity and effectiveness. On April 26, emergency teams from the Spanish Civil Guard succeeded in constructing five separate dams or dikes, diverting the flow of the Guadiamar River from Doñana National Park into the nearby Guadalquivir River, which skirts the eastern boundary of the park.³⁶ The Guadalquivir is a much larger and faster flowing river and dumps directly into the Atlantic Ocean.³⁷ Boliden later admitted that toxic material continued to flow into the Agrio River for five days after the accident before the break was closed with rocks.³⁸ In fact, mine employees actually continued pumping the highly acidic water into the river so that the breach could be fixed.³⁹ Finally, cleanup of the spill was delayed for eight days until May 3.⁴⁰

Initial media response to the accident was surprisingly positive. The reports claimed that "Spanish authorities appeared to have prevented a major ecological disaster . . . when they diverted a huge flow of toxic waste from Doñana National Park,"⁴¹ and "[o]ne of Europe's great wildlife reserves was saved from an ecological disaster."⁴² A Boliden spokesperson claimed that the spill had caused only "limited property damage."⁴³ These reactions are accurate in part, for the disaster would have been many times greater had the spill actually reached the park's swamps. Nevertheless, the months that have passed since the spill are beginning to show that such optimism was not entirely warranted.

35. See *Conclusions of the First Report*, *supra* note 25. The water was determined to have a pH of 2.5. See also *Mine Waste Diluted in River*, ENGINEERING NEWS-REC., May 4, 1998, at 14, available in 1998 WL 8135469.

36. See Del Pozo, *supra* note 12.

37. See *id.*

38. See Charles Clover & Tim Brown, *International: Spain Accused of Having No Plan to Spare Wetlands from Pollution*, DAILY TELEGRAPH (London), May 1, 1998, available in 1998 WL 3014761.

39. See *id.*

40. See *Tailings Dam Ruptures at Spanish Mine*, *supra* note 19.

41. Del Pozo, *supra* note 12.

42. *Spanish National Park Nearly Drowned in Poison*, AGENCE FRANCE-PRESSE, Apr. 26, 1998, available in 1998 WL 2269127.

43. *Ecological Disaster as Toxic Waste Hits Rivers*, BIRMINGHAM POST, Apr. 28, 1998, available in 1998 WL 21952426.

D. Consequences

Although the accident's worst potential—the entrance of the spilled waters into Doñana's wetlands—was averted, ecological effects of the spill were serious and continue to increase.

Aquatic life in the affected area was devastated by the spill. Fearing that birds would feed on dead and dying fish, volunteers collected fifteen tons of dead fish, eels, crabs, and frogs from the contaminated area by May 3, just one week after the accident.⁴⁴ In a single day, they collected 14,300 pounds of dead fish and other animals.⁴⁵

In addition to the fish, dead birds were found along the banks in the first weeks following the spill, as well as the rotting carcasses of a sheep and deer, which probably drank from the poisoned waters.⁴⁶ By August 4 an estimated 2000 birds had died as a direct result of the spill.⁴⁷

The park's wetlands also face serious future damage as an indirect consequence of the spill. The Guadiamar and its polluted waters are being kept from entering the park, but the river is the main supplier of rainwater for the park's marshes and wetlands.⁴⁸ The area is just recovering from the effects of a five-year natural drought and may not be able to receive water from the Guadiamar for many years to come.⁴⁹

In addition, the toxic material has in fact already begun its slow, but inevitable journey up the food chain. Scientists from the British Institute of Terrestrial Ecology have shown that the dangerous heavy metals were already present in some plants known to be an important food source for many bird species.⁵⁰ Plants in the contaminated areas had concentrations of metals about 100 times that of the plants outside the contaminated area.⁵¹ Even though the spill covered only three percent of the park, the most contaminated areas are the primary feeding areas for

44. See *Poisonous Mud Being Shifted to Save Spain's National Park*, AGENCE FRANCE-PRESSE, May 3, 1998, available in 1998 WL 2273201.

45. See Benjamin Jones, *Saving Doñana Nature Reserve*, EUROPE, Oct. 1, 1998, available in 1998 WL 15049197.

46. See Elizabeth Nash, *Spanish Finally Clean up Toxic Sludge*, INDEPENDENT (London), May 4, 1998, available in 1998 WL 13648179.

47. See David Brown, *International: Wildlife Faces Second Toxic Sludge Disaster*, DAILY TELEGRAPH (London), Aug. 4, 1998, available in 1998 WL 3036738.

48. See Giles Tremlett, *Spanish Wetlands Face Water Shortage After Dams Block Toxic River*, TIMES (London), Apr. 29, 1998, available in 1998 WL 4833306.

49. See *id.*

50. See Nick Nuttal, *Threat to Birds at Winter Site Hit by Poison*, TIMES (London), Aug. 4, 1998, available in 1998 WL 4853014.

51. See *id.*

several bird species.⁵² Park records show that species such as the Gull-Billed Tern and the Black-Necked Grebe feed exclusively or primarily in the area that was most seriously affected.⁵³ Moreover, an aerial count from two years ago found fifty-four percent of the park's cormorants and forty-six percent of its flamingoes in that same area.⁵⁴ Researchers from the Doñana Biological Station reported in October that levels of copper and zinc were twenty times normal concentrations and five times maximum tolerable conditions in several aquatic bird species.⁵⁵

Perhaps the most serious long-term threat is the potential that the toxic material will reach the aquifer below Doñana and the surrounding area. Aquifer 27, which lies directly below the park, is up to 700 feet deep and covers 2000 square miles.⁵⁶ Aquifer 27 is responsible for maintaining nearly all permanent waters in the park.⁵⁷ Initial tests indicated that no toxic material had yet reached the aquifer.⁵⁸

However, in December 1998, the Consejo Superior de Investigaciones Cientificas (CSIC) indicated that the soil in some areas still contains high levels of arsenic, thallium, and lead despite the fact that the area is "officially clean."⁵⁹ The CSIC also determined that as much as ten percent of the contaminated mud from the mine was left behind after

52. See John Hooper, *Poison Timebomb in Bird's Key Haven*, GUARDIAN, June 5, 1998, available in 1998 WL 3107583.

53. See *id.*

54. See *id.*

55. See Luis Miguel Ariza, *Deadly Legacy*, NEW SCIENTIST, Oct. 24, 1998, at 24.

56. See Hooper, *supra* note 52.

57. Although approximately half the park floods in the winter as the Guadiamar River rises with rainfall, any parts of the wetlands that remain throughout the summer require water from the aquifer. Whatever contaminants reach the aquifer would reach the park's wetlands and could be spread over the entire park during the winter rains. See *The Ecosystems of Doñana National Park* (visited Jan. 2, 1999) <<http://www.enveng.ufl.edu/wetlands/donana.html>>.

58. See Hooper, *supra* note 52.

59. José Bejarano, *El CSIC Advierte al Gobierno que el Parque de Doñana Sigue Estando Contaminado, La Vanguardia Digital* (last modified Dec. 2, 1998) <<http://www.lavanguardia.es>>. The latest CSIC report provides even more troubling news. Despite the summer's intensive cleanup operations, CSIC scientists have found "extreme" levels of acidity in the soil upstream from the park and arsenic levels as high as 10 parts per 1000. Tests on the area's bird and marine life found "sublethal quantities of heavy metals in liver and muscle tissue," which led the scientists to conclude that the metals have entered the food chain. Doñana has been described as "an exporter of contamination," and the actual effects of the disaster will not be known until information can be gathered from across both Europe and Africa. Richard Weyndling, *Effects of Toxic Spill on Wetland Confirmed*, GUARDIAN, Jan. 8, 1999, at A11, available in WESTLAW, ALLNEWS Database.

the cleanup.⁶⁰ The area that appears to be in the worst condition is the area for which Boliden was responsible.⁶¹ The CSIC calculated that about eight percent of the birds that winter in the park would be contaminated.⁶²

A report by the Royal Society for the Protection of Birds revealed in August another unfortunate side effect of the spill.⁶³ When tailings are dumped into the storage ponds, they are covered with water, which prevents oxygen from reaching the various minerals. The report states that, now that the toxic sludge has spread over the landscape, chemical reactions are in fact making it even more toxic.⁶⁴ Any material that remains will continue to grow more toxic and has an increased chance of reaching the aquifer under the park during the winter rains.⁶⁵

E. Legal and Economic Ramifications

Before the spill was contained by the hastily constructed dikes and sent off to be forgotten in the Atlantic Ocean, about forty kilometers of the river and the valley surrounding it were affected. Estimates by the regional government from April 30 established the affected farmland at 12,500 acres,⁶⁶ although the areas whose water, canals, and wells were affected would be found to be substantially larger in the following months.

Estimates of the damages, however, vary significantly. In fact, farmers' associations estimated the damaged area at 25,000 acres,⁶⁷ some of which may have to be left fallow for up to twenty-five years.⁶⁸ Estimates from just a few days after the spill valued the loss of crops at US\$79 million.⁶⁹ This value includes approximately US\$13 million in

60. See Bejarano, *supra* note 59.

61. See *id.*

62. See *id.*

63. See *Worldview Spain: Enviros Say Autumn Rains May Worsen Spill Damage*, AM. POL. NETWORK (GREENWIRE), Aug. 5, 1998, at 20, available in WESTLAW, ALLNEWS Database.

64. See *id.*

65. See *id.*

66. See Clover & Brown, *supra* note 38.

67. See Del Pozo, *supra* note 12.

68. See Tremlett, *supra* note 48.

69. See Johanna Tuckman, *Toxic Spill Destroys Crops, Threatens Fishing Industry*, FRESNO BEE, Apr. 29, 1998, at A9, available in 1998 WL 8741872.

immediate crop losses and long-term damages of US\$67 million.⁷⁰ Later, on May 21, it was announced that local authorities would buy the contaminated agricultural land.⁷¹ The estimated cost is US\$40 million.⁷²

Although Boliden has not accepted responsibility for the spill, it has offered to compensate farmers US\$6.5 million for their damages.⁷³ Boliden is also responsible for cleaning up the upper third of the contaminated river, with the Spanish and Andalusian regional governments cleaning up the remaining portions. Boliden has spent approximately US\$34 million cleaning its portion and has stated that it will compensate the regional government for any money it spends on the cleanup,⁷⁴ an amount that had reached approximately US\$250 million by August 5, 1998.⁷⁵ In addition to these funds, the European Union stands ready to contribute £70 million to build additional dikes to divert contaminated water, but by August 4, Spanish governments could not agree on a plan that suited the EU.⁷⁶

Boliden could still be found liable for much greater damages.⁷⁷ The Spanish government has left the question of responsibility to a provincial court, where the issue could remain for quite some time.⁷⁸ Furthermore, Spain has indicated that it might bring criminal proceedings against the party found responsible.⁷⁹ However, Boliden is not alone in facing potential liability. A regional branch of the United Left political party in Seville has filed a lawsuit against Boliden, Spanish Environment Minister Isabel Tocino, and several regional officials for ecological crimes.⁸⁰

70. See *Boliden Mine's Spill Scars Spanish Land*, AM. METAL MARKET, May 5, 1998, at 11, available in 1998 WL 10087864.

71. See *Spanish Army to Stay out of Toxic Clean-up*, AGENCE FRANCE-PRESSE, May 21, 1998, available in 1998 WL 2286073.

72. See *id.*

73. See Brent Shearer, *Boliden to Pay \$6.5M to Farms*, AM. METAL MARKET, May 11, 1998, at 5, available in 1998 WL 10087030.

74. See *Law Suit for Boliden*, MINING J., June 5, 1998, at 439.

75. See *Spain: Regional Expenditure on the Environment*, INT'L MARKET INSIGHT REP., Aug. 5, 1998, available in 1998 WL 13711547.

76. See Brown, *supra* note 47.

77. See *Canadian Mining Firm Sued*, GLOBE & MAIL (Canada), May 28, 1998, at A12, available in WESTLAW, ALLNEWS Database.

78. See Del Pozo, *supra* note 12.

79. See *Prosecution Could Follow Spain's Toxic Waste Spill*, AGENCE FRANCE-PRESSE, Apr. 30, 1998, available in 1998 WL 2272260.

80. See *Law Suit for Boliden*, *supra* note 74. This is not the first time Spain has faced international criticism for its environmental policies and management. In 1990, the European Community opened an official investigation against Spain for violations of

Two recent developments indicate that the actual property damage is only the beginning of liability stemming from the accident. On November 11, 1998 the Spanish Attorney General ordered that the investigation be widened to include the possibility of a crime against the public health.⁸¹ Considering that more than 46,000 farmers were affected by the accident,⁸² the potential for liability in that area is enormous.⁸³

In addition, a class action law suit against Boliden has been filed in Vancouver alleging shareholder losses stemming directly from the disaster in Spain.⁸⁴ The suit alleges that Boliden knew that the dam at Los Frailes posed a disaster risk prior to a public offering in 1997 that raised US\$900 million.⁸⁵ The named shareholders, Donald Pearson and Elizabeth Matus, purchased Boliden stock in July 1997 at US\$16 per share.⁸⁶ In January 1999 the shares traded near US\$4.⁸⁷ The suit estimates that the shareholder's loss due to the Spanish disaster is between US\$50 million and US\$100 million.⁸⁸

environmental norms with respect to Doñana. Spain was in the process of approving a project consisting of a very large condominium and marina complex just outside the park boundaries. Scientists from the park, environmental activists from both Spain and other European countries, and environmental officials from the European community were all strongly opposed to the project. This also occurred at a time when the EC Commission was chastising Spain for being the worst violator of EC environmental laws, including 180 separate charges of environmental wrongdoing. See James J. Friedberg, *Views of Doñana: Fragmentation and Environmental Policy in Spain*, 3 COLUM. J. EUR. L. 1, 4 (Fall 1996/Winter 1997).

81. See La Vanguardia Digital, *El Fiscal Investigará si hay Delito Contra la Salud Pública en el Desastre de Doñana* (last modified Nov. 12, 1998) <<http://www.lavanguardia.es>>.

82. See Eulalia Furriol, *Un Vertido Toxico Amenaza Doñana*, GUARDIAN, June 30, 1998, available in 1998 WL 3112955.

83. Boliden has already suffered significant losses. For the quarter April-June, Boliden recorded a loss of US\$52.1 million, compared to a profit of US\$19.7 million for that same period in 1997. See *Boliden Entra en Pérdidas por los Costes de Aznalcóllar* (visited Jan. 4, 1999) <<http://www.hispavista.com/bolsa/noticias/eco2613089819.shtml>>.

84. See Schreiner, *supra* note 18.

85. See *id.*

86. See *id.*

87. See *id.*

88. See *id.*

F. Conclusion

The Spanish disaster has slowly disappeared from world headlines and went virtually unnoticed in the US press.⁸⁹ This is despite the fact that the weight of waste discharged from the tailings pond was nearly four times as great as that released in the 1989 Exxon Valdez oil tanker spill in Alaska.⁹⁰ Although the current and potential lawsuits are wide-reaching, the issue is not being pursued with the vigor that the European Union has displayed on previous occasions.⁹¹

Perhaps the absence of activity is what makes this occurrence most interesting from a policy perspective. Doñana is the largest protected area in Europe, with a history of 700 years. The Spanish government, however, seems either incapable of or unwilling to take steps to protect the park. Despite the drastic effects of the spill, and a plan currently under consideration that would clean up the Guadiamar Basin, the Spanish government has given Boliden official backing to reopen the mine in March or April of 1999.⁹²

This part of Andalusia is one of Spain's poorest regions, and both the Spanish regional and national governments have an interest in retaining the jobs that the Boliden operation provides. Unfortunately, to do so they were willing to risk, and are willing to risk again, one of Europe's great natural treasures.

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89. Spanish authorities have been accused of attempting to downplay the incident both to disguise the government's failures and to protect Spain's tourism interests. *See Prosecution Could Follow Spain's Toxic Waste Spill, supra* note 79. The Royal Society for the Protection of Birds has blamed "politics and bureaucracy" in Spain for hindering the cleanup campaign. *See Brown, supra* note 47. The Andalusian government promised 1600 workers for the cleanup, which have not been provided. *See id.* In addition, the World Wide Fund for Nature has complained of the conservative Spanish national government's failure to coordinate with the socialist-led Andalusian regional government. *See Clover & Brown, supra* note 38.

90. *See Hooper, supra* note 52.

91. *See Friedberg supra* note 80.

92. The plan under consideration by the European Union, Doñana 2005, would spend US\$125 million on the Guadiamar Basin cleanup. Spain has asked Boliden to reopen the mine to protect the 500 jobs it offers, a position that is argued will make "nonsense" of the EU plan. *Weyndling, supra* note 59.

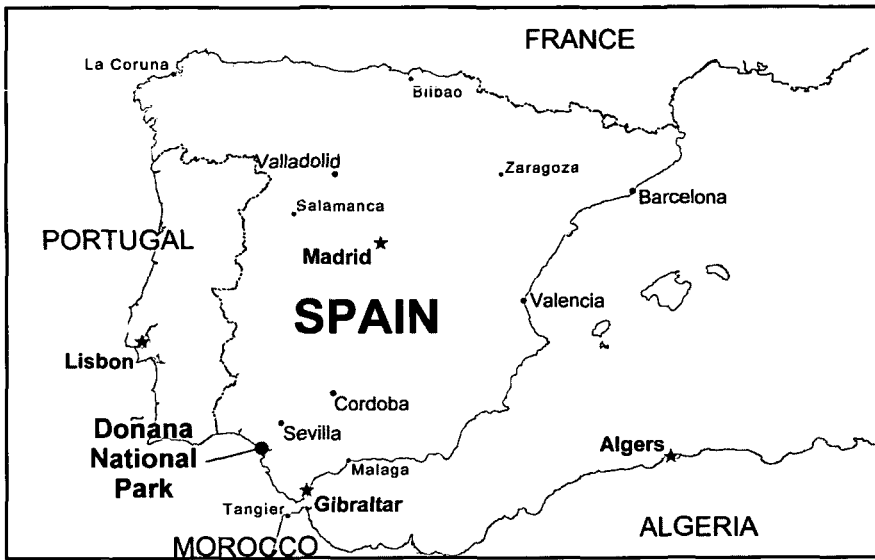


Figure 7 - Doñana National Park