

## Spain's Earth Scientists and the Oil Spill

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The Spanish coast of Galicia is currently subject to an oil spill that, given its spatial and temporal extent, could become one of the worst spills ever. The Spanish and the local Galician governments have been maintaining for 30 days that, since 13 November, when the tanker Prestige ran into problems, every decision implemented throughout this crisis, including the key resolution of transporting the vessel offshore, was guided by the technical advice of Spanish experts. In our opinion, the recurrence and indiscriminate generalization implicit in such a statement entail a serious threat to the credibility of the Spanish Earth sciences community as a whole. Moreover, this crisis is revealing a serious malfunctioning of the national research system. This moves us, as marine and atmospheric scientists, and members of the Spanish Institute of Oceanography (IEO), National Research Council (CSIC), universities, and other research centers, to express the following:

1) Given the well-known winter climatology of the area of the spill, dominated by west-southwesterly winds and a south to north slope current on the sea (1–11), the decision to move the vessel from about 43°N, 9.5°W offshore to the southwest was consequence of poor communication between the government officials dealing with the spill and the scientific and technical communities, rather than a deficit of knowledge. This move was responsible for the spreading (spatial amplification) of the spill, which now extends across about 900 km of shoreline. The position of the sunken ship at about 42°N, 12°W, 145 nautical miles off the south coast of Galicia will probably cause successive oil waves (temporal amplification) to arrive at the Spanish, Portuguese, and/or French coasts. Thirty days after the first spill (12), the Galician coast now faces a third, and possibly not the last, oil wave.

2) Once the oil spill had occurred, the poor coordination of the Spanish authorities has led to a very ineffective use of scientific institutions, resources, and knowledge, reflected in inexplicable delays and overlapping actions. For example, the first draft of a scientific action plan is dated 13 December, 1 month after the beginning of the crisis and 4 days after the first scientific commission was convened.

3) We demand that the Spanish authorities improve the mechanisms and logistics for scientific and technical consultation and refrain from making vague public statements that are seriously, and unfairly, damaging the image of Spanish marine and atmospheric sciences.

## References and notes

1. X. A. Álvarez-Salgado et al., *Progr. Oceanogr.*, in press.
2. I. Álvarez, M. deCastro, R. Prego, M. Gómez Gesteira, *Estuarine Coastal Shelf Sci.*, in press.
3. J. M. Cabanas, A. Lavín, M. J. García, C. Pola, E. Tel Perez, *Mar. Sci. Symp.*, in press.
4. E. Fernández et al., *J. Plankton Res.* 15, 619 (1993).
5. R. Frouin, A. F. G. Fiuza, I. Ambar, T. J. Boyd, *J. Geophys. Res.* 95, 679 (1990).
6. C. García-Soto, R. D. Pingree, L. Valdés, *J. Geophys. Res.* 107, 3118 (2002).
7. R. Haynes, E. D. Barton, *J. Geophys. Res.* 95, 11425 (1990).
8. A. Lavín, G. Diaz, G. Casas, J. M. Cabanas, *Inf. Téc. Inst. Esp. Oceanogr.* 15, 25 pp. (2000).
9. R. D. Pingree, B. Le Cann, *J. Mar. Biol. Assoc. U.K.* 70, 857 (1990).
10. E. Teira, P. Serret, E. Fernández, *Mar. Ecol. Prog. Ser.* 219, 65 (2001).
11. W. S. Wooster, A. Bakun, D. R. Mclain, *J. Mar. Res.* 34, 131 (1976).
12. This letter was written on 21 December 2002.