

Wildlife response in the aftermath of the *Prestige* incident

Antonio Sandoval Rey

Terranova interpretación y Gestión Ambiental S.L.

sandoval@terranova-sl.es

www.terranova-sl.es

Apdo. de Correos 5477 - E-15080 A Coruña

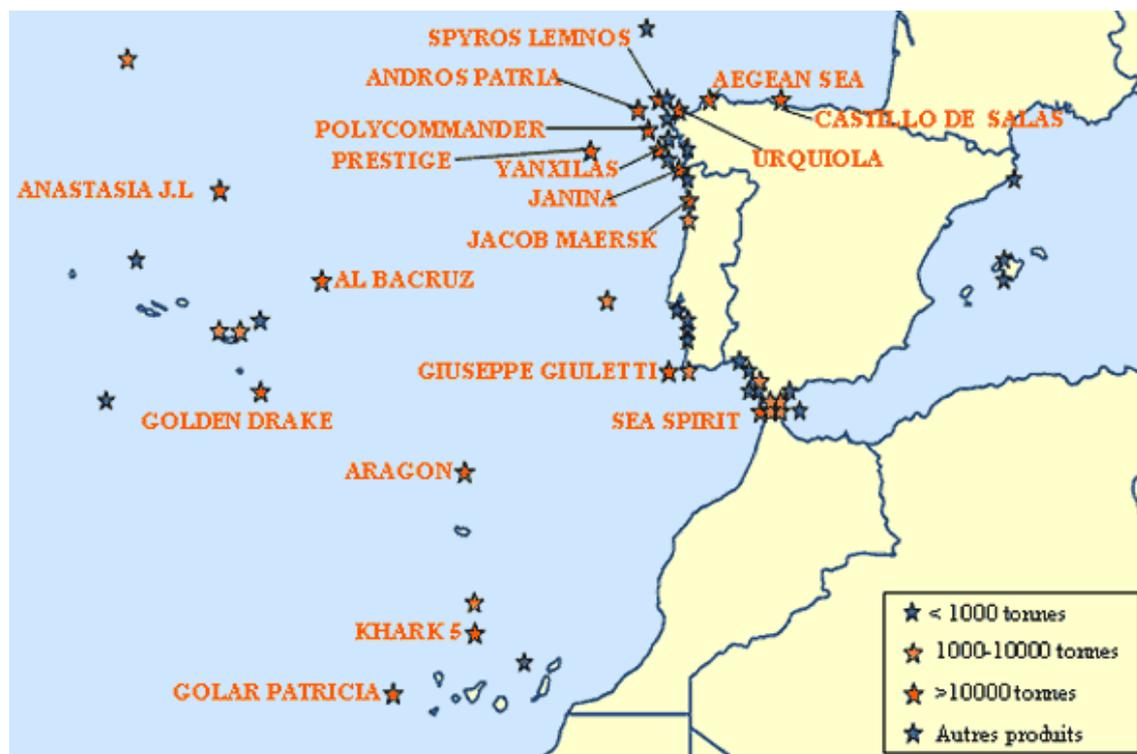
Introduction

Galicia (NW Spain) is a crossroads for seabirds as well as for tankers.

More than a million of seabirds of several species (some of them critically endangered) migrate across this area twice a year. Their geographical origins are quite diverse: the British isles, the Canadian or Russian Arctic, the Mediterranean or even some South Atlantic islands. Other birds winter in the open sea in unknown numbers, but most surely several thousands, or close to the coast, or have huge colonies in several cliffs and islands.

As the NW corner of the Iberian, this is an area across which everyday navigate several tankers. It is not surprising that eleven serious oil spills have taken place in Galicia (NW Spain) during the last 50 years. The most important ones, as regards volume of spillage, include the *Polycommander* (1970), *Urquiola* (1976), *Andros Patria* (1978), *Aegean Sea* (1992), and *Prestige* (2002).

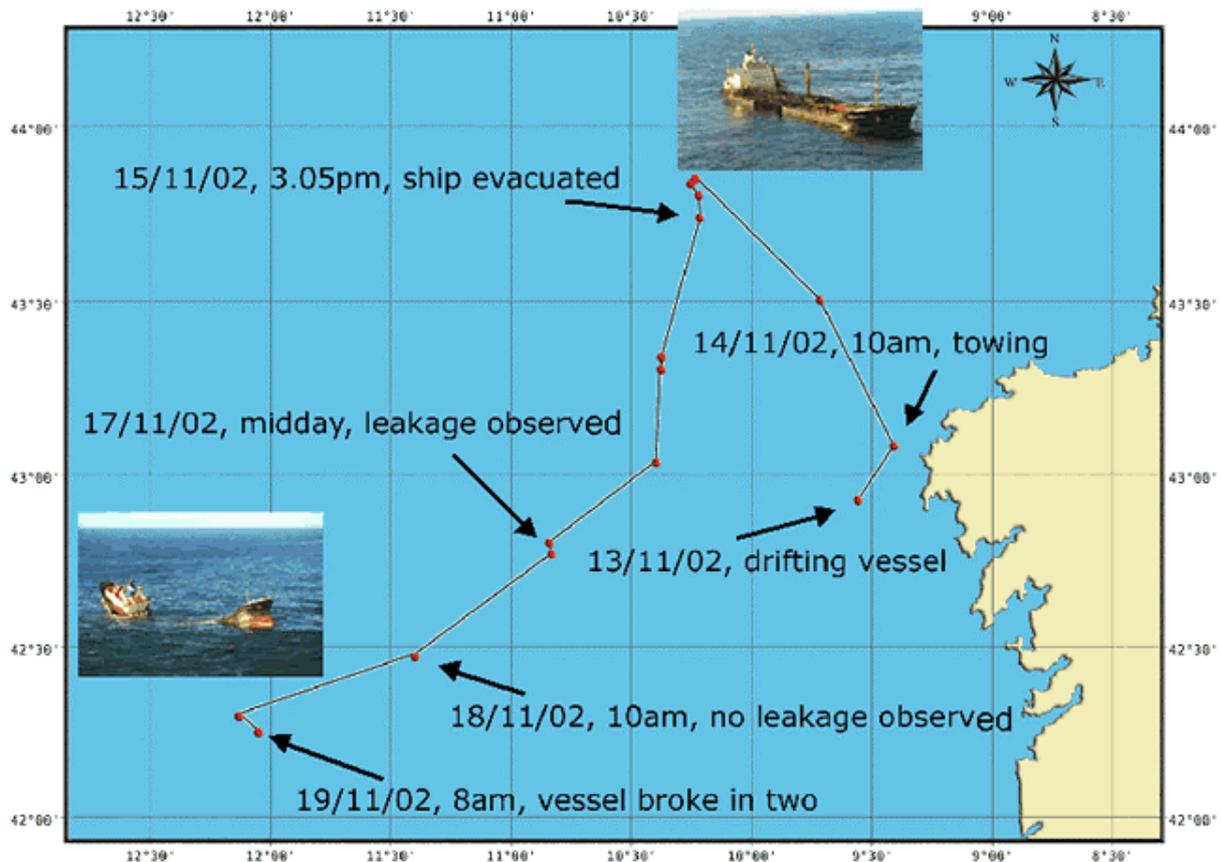
Most important oilspills close to Galicia from 1950 to 2000 (source: www.lecedre.fr)



The *Prestige* incident

On November 13th, 2002, the *Prestige* oil tanker, with 77,000 tons of fuel on board, broke down off the Galician coast. Six days later it split into two 120 miles SW of A Coruña, and sank in water 3,5 km deep. The oil spilled then and during the following months severely affected the coastline between North Portugal and France, especially Galicia's western coast.

The *Prestige* route (source: www.lecedre.fr)



From the first hours of the incident, it was clear that bird populations were at risk along 1.165 kilometres of coastline only in Galicia. In addition, Galicia contains an important population of Eurasian otters (*Lutra lutra*), and is an area where dolphins and marine turtles occur.

During the first week of the crisis, the Xunta de Galicia (Galicia's Regional Government), the Spanish Government, local, regional and national nature organisations (SEO/BirdLife, WWF and others) and universities (A Coruña's Science Faculty and others) began to implement a coordinated response in order to collect oil-covered fauna on the coast and take it to rehabilitation centres.

Within a few days, oil reached the coast and the first birds were washed ashore. Local authorities and specialist organisations became active to organise the necessary wildlife response activities and international groups were offering their services, which was most welcomed (for more information see García et al, 2003).

The response at Galicia

Live animals, predominantly birds but also turtles, were treated, while dead animals were collected, counted and analysed. Numerous international institutions (Sea Alarm, IFAW, Project Blue Sea / Ölvogelhilfe, WWF, Point Reyes Bird Observatory, and others) cooperated actively, with human and material resources, in this work in close collaboration with local organisations. Subsequently, due to the extension of the oil slick, similar responses were initiated, in other Spanish regions as well as in Portugal and France (see García et al, 2003 for more details).

A) Collection of birds.



The bird collection was organised by SEO/Birdlife, in cooperation with two international experts, Kees Camphuysen (NL) and Martin Heubeck (UK). Birds were collected by volunteers searching for live birds and beach cleaners. Every day, from the very beginning of the crisis over three subsequent months, all the beaches of A Coruna province (which were amongst the most affected) were searched by one or two groups of volunteers. The volunteers were given health and safety instruction and provided with an insurance and offered a place to

sleep at a youth hostel. Every night after dinner there was a meeting in the youth hostel in order to prepare the following day's work.

In A Coruña province alone, more than 1400 volunteers cooperated in the collection of birds only, from november 2002 to april 2004.

Birds were collected and transported following international guidelines.

B) Live birds.

All live oiled birds found in the province of A Coruna went through the holding centre in Oleiros (set up and managed by Xunta de Galicia and WWF) before being transported to the temporary wildlife hospital in O Campino, Pontevedra, which was set up and managed by IFAW, in cooperation with the Pontevedra and Galician authorities. This wildlife hospital provided washing and rehabilitation facilities. In the north of Galicia, a number of forward holding centres were established in the most remote areas near the beaches where birds were found. There, the animals received first aid before their evening transport to Oleiros, where they were further stabilised before their transport to the Wildlife Hospital.

O Campino wildlife Hospital



Birds found on local beaches in Pontevedra Province went directly to the Wildlife Hospital, sometimes after first aid treatment in one of the six field stations that were set up. The Wildlife Hospital also received birds from Lugo Province and Portugal.

A total of 566 birds, 301 of which were originally found in Galicia, were released along Spain's Cantabrian-Atlantic coastline after rehabilitation.

B) Dead birds.



Carcasses from all Galician beaches were transported to the holding centre in Oleiros, from where they were sent to the University of La Coruña for dissection. Dissection work, basically a necropsy to identify species, sex and biometry, was coordinated by Kees Camphuijsen (NL), Martin Heubeck (UK), and Dr. Roberto Bao (A Coruna University).

6.180 corpses were analyzed, representing 26,66% of the total number of birds collected, and 80, 97% of the birds found at A Coruna province. Up to 300 birds were dissected in one single day.

After dissection, corpses were returned to Oleiros from where they were sent to an incineration plant.

The data obtained through these operations has provided new information about the age, sex, origin and feeding of the birds affected. Three years after

the incident, these data are still today part of several projects coordinated by Dr. Roberto Bao (Fernández Boán *et al.*, 2005; Ramos *et al.*, 2005; Bao *et al.*, 2005).

The birds affected

From November 16th, 2002 to August 31st, 2003 a total of 23,181 birds (6,121 living specimens), corresponding to 90 species, were collected on the Portuguese, Spanish and French coastlines (García *et al.*, 2003). More than 50% of them were found in Galicia. The most affected species were the Guillemot *Uria aalge* (51% of the total), the Razorbill *Alca torda* (17%) and the Puffin *Fratercula arctica* (17%).

Most of these birds had their origin in the western coast of British isles (Moreno-Opo *et al.*, 2003). The data obtained about these birds is of great importance to analyze the real impact of the spill on their populations at a global and regional level (see for example Voitier *et al.*, 2005).

Bird Mortality

Total bird mortality is estimated at between 115,000 and 300,000, according to different authors:

- a) 115.000 – 230.000 birds (García *et al.* 2003).
- b) 250.000-300.000 birds (Domínguez, 2003)
- c) 150.000 – 250.000 birds (Arcos *et al.*, 2004).

The post-*Prestige* and the future

In 2003, the Xunta de Galicia approved the development of “A Basic Contingency Plan for Marine Contamination”, which resulted in the recent “First Contingency Plan for Marine Contamination in Galician Rias”. A “Contingency Plan for Oil Slicks Affecting Marine Fauna and Protected Nature Reserves” is currently being prepared, while the existing permanent wild fauna rehabilitation centres throughout Galicia are being remodelled to be better prepared for oiled wildlife.

Meanwhile, several studies have proven the impact of the *Prestige* incident on the several birds based on monitoring results in the first two years after the spill. Two examples are:

Shag *Phalacrocorax aristotelis* colonies in south Galicia had a very low reproductive success (50% than in less affected coastal areas) due to the fact that their usual prey (the nutritive Sandeel *Ammodytes* sp.) has still not recovered from the spill (Velando *et al.*, 2005).

Peregrine Falcon *Falco peregrinus* pairs in Basque Country also suffered from a very low reproductive success the spring after the *Prestige* incident (Zuberogoitia 2005). Although not a seabird, falcons are known to feed on seabirds, and it is easier for them to catch the oiled ones. Polycyclic hydrocarbons were detected in adult falcons as well as in eggs, with disastrous effects on this bird's regional population.

The effects of oil spills on bird populations (and not just on individual specimens, even in thousands) can only be evaluated by means of a thorough analysis of the impact during and after the crisis. This analysis is only possible when funds and experts are made available to safeguard the scientific data on site, immediately after the first casualties have been reported. In a recent article that uses the data provided by the *Prestige* response, it was proven that winter mortality of adult Guillemots *Uria alge* is doubled by major oil pollution incidents, with wide-scale impacts on marine ecosystems (Voitier *et al*, 2005).

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