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Summary of the circumstances of the May 1996 stranding

2.1 Marine mammals of the Mediterranean Sea

In the Mediterranean Sea, 19 species of cetaceans have been recognized; 8 of them are to be considered common (*Balaenoptera physalus*, *Physeter macrocephalus*, *Stenella coeruleoalba*, *Grampus griseus*, *Globicephala melas*, *Tursiops truncatus*, *Delphinus delphis*, *Ziphius cavirostris*), while 4 are occasional (*Balaenoptera acutorostrata*, *Orcinus orca*, *Pseudorca crassidens*, *Steno bredanensis*), and 6 accidental, alien to the Mediterranean, but occasionally sighted in the last 120 years; moreover, we have to consider the presence of a small population of *Phocoena phocoena* in the Black Sea (Notarbartolo et al., 1994).

2.2 Location of the acoustic trial and stranding locations

Figure 2.1 gives the time relation between the SWAC research, carried out on 12 - 15 May 1996 in the Kyparissiakos Gulf and the stranding of Cuvier's beaked whales (*Ziphius cavirostris*) on the coast of that Gulf. Strandings coincided in time with runs 9 and 10 (12 May) and with run 13 and 14 (13 May). Figures 2.2 and 2.3 give detailed maps of the stranding locations. . (NOTE: All times listed have been converted to ZULU, Local time – 3 h)

2.3. Stranding information

The Hellenic Cetacean Research and Conservation Society, DELFIS, (Dr. A. Drouga, in conjunction with Dr. G. Haralabus, SACLANTCEN) supplied following information concerning the stranding of Cuvier's beaked whales in the Kyparissiakos Gulf in May 1996

- Sunday afternoon, 12-05-96, DELFIS was notified for the first time by the Kyparissiakos Coast Guard about the stranding of three (3) cetaceans in various places in Kyparissiakos Gulf. The same evening a new message was received from the Katakolo Coast Guard regarding similar incidents.
- Stranding cases of *Ziphius* in west Peloponnissos and the islands of Zakynthos and Kefalonia have been recorded since 1993. However, these were isolated stranding cases of one to three whales.
- For many days the DELFIS team conducted an investigation at Kyparissiakos Gulf. It was found that:

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Along the 30-35 km coastline 12-13 (according to others 17) *Ziphius cavirostris* were stranded. DELFIS located and examined 7 of these whales. During this time the rest of the *Ziphius* was buried by the local authorities in various places in the bay because the tourist season had begun and the dead whales were in an advanced state of decomposition after a couple of days. Within the following 20 days, DELFIS was notified by the Katakolo Coast Guard of one (1) decomposed *Ziphius* which had stranded in a shallow water area.

The following *Ziphius* were located:

- one (1) male at Agrili near Filiatra
- one (1) female at Kalo Nero, near Kyparissiakos; it was found alive and died on 13.05.96
- one (1) male, on Kartelia beach, Kyparissiakos.
- four (4) male, at Bounaki, one of which died on the 14.05.96.

All the above whales were estimated to be 4-5 years old, they had just entered adolescence. Also, fresh food was found in their stomachs (abundant deep sea kalamari).

The Katakolo Coast Guard commander, Mr. Georgios Sarigiannis, informed DELFIS that:

- On Monday 13.05.96 one (1) *Ziphius* was swimming at a distance from Neoxori beach.
- On Wednesday 15.05.96 one (1) *Ziphius* was sighted at Kavouri beach, Katakolo. It went away but later was trapped in fishing nets and was freed with the help of the Coast Guard. The evening (1730) of the same day one (1) *Ziphius* was trapped in nets inside the Katakolo harbour. The Coast Guard set it free.
- On Thursday, 16.05.96, two (2) *Ziphius* were sighted at the shallow water area of Bartolomeo, Katakolo, but they had gone before the Coast Guard came close to them.
- Finally, on 12.06.96, one (1) *Ziphius* was found decomposed at Kaiafa area, Zaharo.

It must be mentioned that the number of stranded whales could be larger as it is known that most cetaceans sink when they die. It must be also mentioned that, according to eye witnesses of the stranding, a large number of animals were alive when they were beached.

2.4. Necropsy and biological/chemical analyses

Veterinarian N. Andrianopoulos (Veterinary Office Kyparissiakos) verified the stranding of nine (9) *Ziphius* in the Kyparissiakos area. Specimens of bowels were taken. No analysis results are known, however. Most of the whales had a full stomach at the time of stranding. The stomach contents of seven (7) *Ziphius* were examined by the National Centre for Marine Research in Athens. The contents consisted entirely of *Cephalopod* remains. Identified were two oceanic teuthoid species: *Histioteuthis bonnellii* and *Octopoteuthis sicula* (both midwater squids).

After the strandings, analyses of 13 *Ziphius* blood samples were carried out by the Erasmus University, Rotterdam, The Netherlands. These samples were tested for the

presence of *Morbillivirus (DMV)* specific antibodies and *Herpes* antibodies (by using PhHV-1). All samples tested proved to be negative for both viruses in a neutralisation assay. There was no evidence that the whales had an active infection with mentioned viruses, indicating that the death of the whales was not caused by a *Morbillivirus* or *Herpesvirus* infection.

No investigation of the whales' inner ears was carried out; consequently the condition of the inner ear after the stranding is not known.

Timeline 12-15 May 1996

(Time Zulu: Local time -3hours)

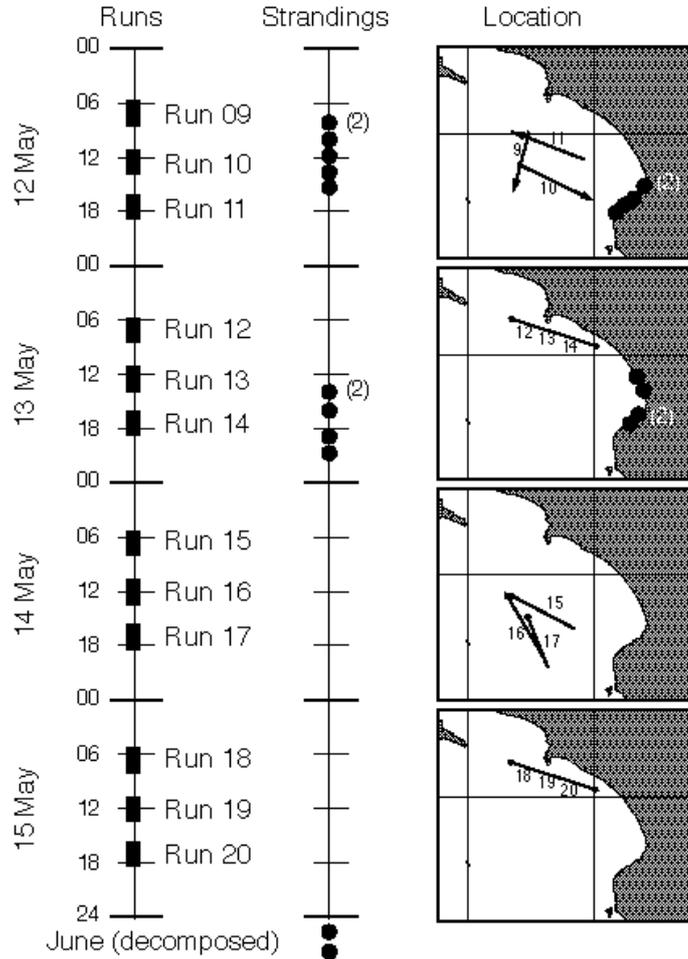


Figure 2.1 Timeline of the SWAC runs and strandings of Cuvier's beaked whales on 12 - 15 May 1996; indicated is:

- the tracks of runs 9 - 20 (NB runs 18 of this trial took place in a different Mediterranean location).
- the location of the strandings
- the time schedule of the runs
- the time strandings were detected

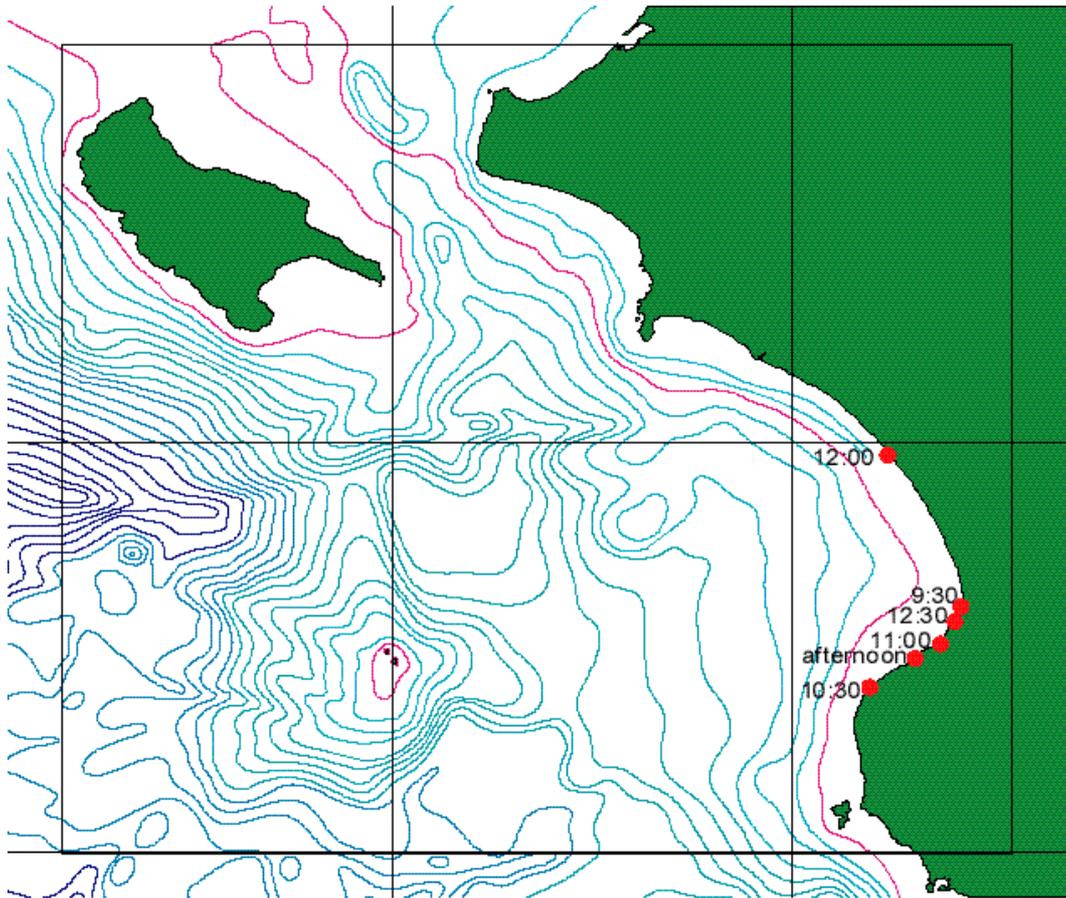


Figure 2.2: Detailed map of strandings on 12 May 1996 (Zulu time).

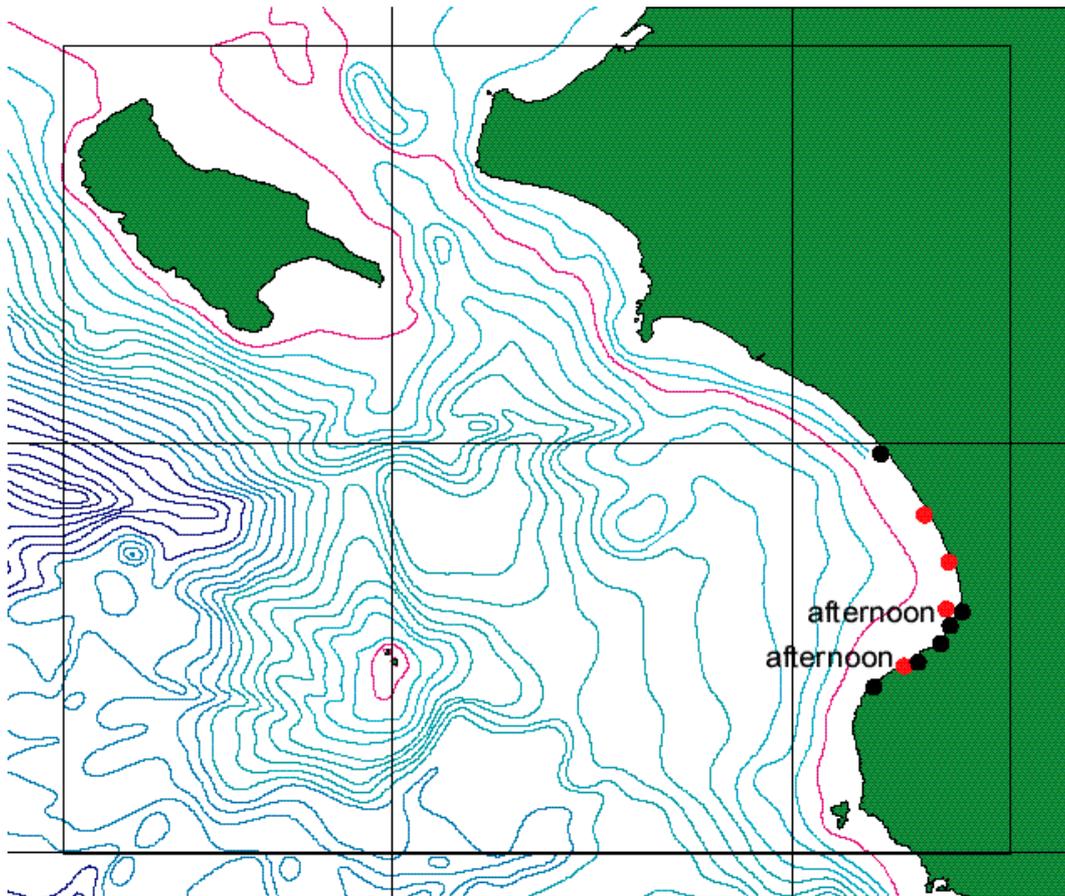


Figure 2.3 *Detailed map of strandings on 13 May 1996 (Zulu time).*