

GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN
INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS

EXPERT CONSULTATION ON THE EVALUATION OF
STOCKS OF LARGE PELAGIC FISHES IN THE MEDITERRANEAN AREA

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THE STRANDING OF CETACEANS ALONG THE COASTS OF PUGLIA:
CONNECTIONS WITH FISHING

INTRODUCTION

The increasing eutrophication of the Mediterranean waters, and of the Adriatic in particular, suggests the setting up of research projects and of monitoring to assess the fluctuations in the characteristics of the waters and their degeneration and pollution rates.

The Regional Authorities in Puglia and in particular the Ecology Department have contributed to this study of the changes in the coastal marine habitat, also setting up a survey and census of the stranding of cetaceans on the coasts of Puglia on the basis of a mortality phenomenon mainly evident in the Salentine peninsula.

The Puglia Regional Ecology Department ruled (N. 3705 - 16.04.87) the setting up of a Regional Commission. An information was set up with the collaboration of the Port Authorities, the Police Force, the Local Veterinary Services and other institutions.

When there are cases of stranding, experts are sent on the spot to collect data on the species, sex, size and damage, etc. When the state of conservation of the animal permit, transport is arranged to a collection centre supplied with cold cells. A necroscopic exam is carried out at once and samples of the various parts are taken to then carry out anatomo-histopathologic investigations, chemical analysis and other biological, microbiological and parasitological investigations to establish the possible causes of mortality.

The data collected are relayed to the Centro Studi Cetacei (an institution conducting a survey on stranding along all the Italian coasts) with which there is a reciprocal exchange of information

so as to obtain more complete information over the entire Mediterranean area.

Data for stranding in the period April 87 - April 90

In the period April 87 to April 90, 85 cetaceans were stranded on the coasts of Puglia. Part of the data collected are reported in the referred list, in particular the species, the sex, the locality and date of stranding, the length and destination of the carcass. It should be pointed out that it was not always possible to carry out accurate observations on the animals stranded because of delays in communication so that putrefaction had already set in.

On necroscopic examination 15 specimen showed solutions of continuity on the skin which may have been caused by fishing action. On some of these it was only possible to carry out superficial macroscopic observation or to examine the single organs or tissues in a reasonably good state.

Evident traumatic lesions such as amputation of the caudal fin were also observed (N. 2 Tursiops truncatus, 1 Stenella coeruleoalba and 2 undetermined dolphins) on some of these specimens, in (N. 1 Tursiops truncatus) various superficial grazes were evident which may be attributed to fishing tackle; a Tursiops truncatus in an advanced state of decomposition presenting a coil of fishing line in its mouth was inspected.

Necroscopic examinations of the cetaceans in a reasonable state were carried out and 6 of these presented various solutions of continuity.

1) Tursiops truncatus stranded at Monopoli (BA) on 21.03.88

External examination showed irregular solutions of continuity of various size all over the skin penetrating under the skin. The caudal fin was missing as a result of a sharp cut presenting edges with medium inflammation.

2) Grampus griseus stranded in the Mar Grande in Taranto on 02.06.88

External examination did not show any alteration. On dissection when examining the mouth orifice apparatus a number of nylon lines were found, one of which with relative hook for sword fish stuck in the pharynx; three other hooks were in the mechanical stomach.

3) Tursiops truncatus stranded at Pilone beach, Ostuni (BR) on 11.03.90

In an advanced state of putrefaction. Two wounds were observed in the right thorax region. They were round in shape, the size of a small coin, with clean cut edges. These wounds penetrated under the skin down to the muscle and reaching the region of the thorax. One extended to the pericardium and the superior right heart

causing death.

4) S.c. stranded at S. Pietro in Bevagna (TA) on 27.03.90

5) S.c. stranded at Marina di Leporano (TA) on 04.04.90

External examination of both revealed solutions of continuity all over the body down to the underlying skin. These were typical marks caused by nets, straight, thin, proceeding irregularly. Lung congestion, the presence of foam in the trachea, exhaustion and myocardium degeneration point to cardio-circulatory collapse as cause of death.

6) Stenella coeruleoalba stranded at Trani (BA) on 06.11.87

On skinning this specimen presented a sero hemorrhagic liquid under the skin and in the muscle tissue in the area of the melon giving the muscle a mushy aspect. Clearly of traumatic origin, this damage extended to the cranial bone which was fractured. A hematoma was evident in the left cerebral hemisphere of the cranial cavity; also the left upper and lower jaw bones were fractured.

Conclusions

Research carried out on cetaceans stranded (N. 85) show that the causes of mortality may be attributed to various factors and mainly to lung congestion, myocardium serious malfunctioning, general toxic situation; parasitosis and traumatic factors.

The presence of PCBs was found in all the specimen examined as well as organo-chlorurate pesticides with variable concentrations according to the tissues and organs involved but never in sufficient quantities to cause death.

Similar considerations may be drawn for the heavy metals and in particular for mercury, lead and cadmium. Only 3 specimens showed a chromium high concentration at liver and dorsal muscle.

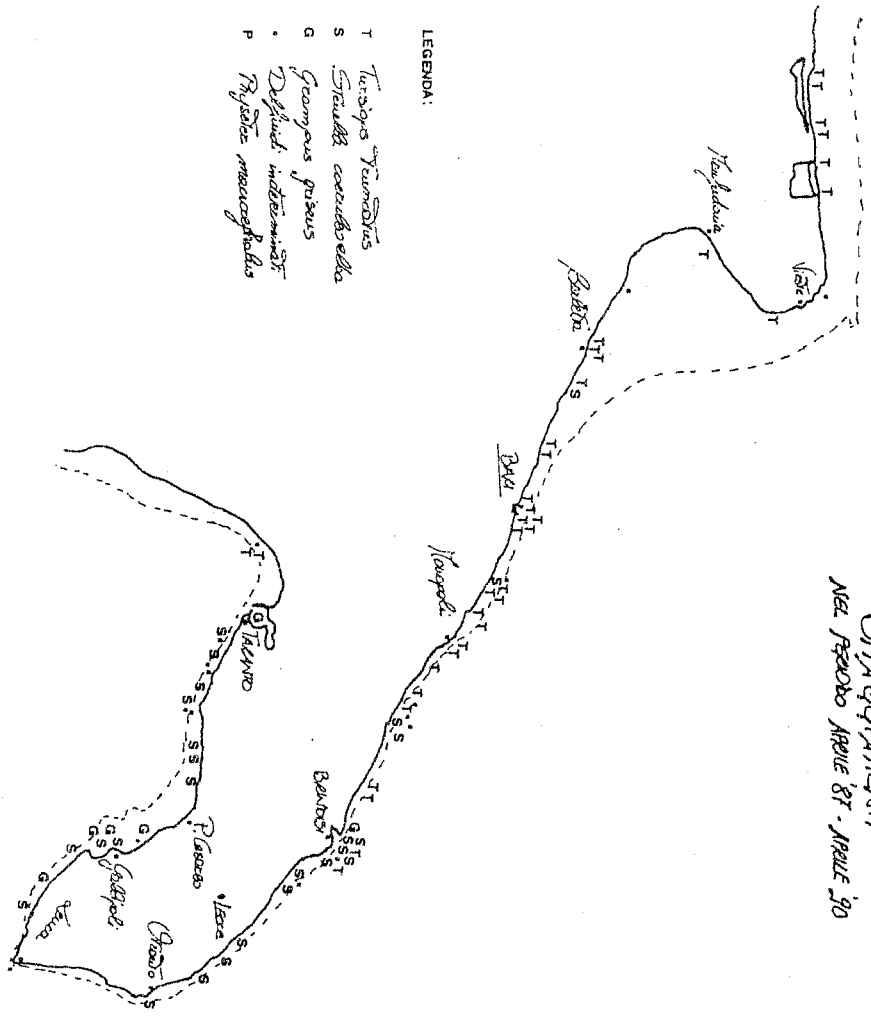
On 13 specimens (S. coeruleoalba, T. truncatus and G. griseus) it was possible to see lesions, the result of fishing action (nets and long-lines) triggering pathologies leading to death.

These preliminary data to be completed and elaborated demonstrate that different fishing activities significantly influence (15,2%) the mortality rate of dolphins along the coasts of Puglia and this data, together with those from other areas of the Mediterranean point out the need to review the selectivity of fishing gears, especially those used for the catch of large pelagic.

However, in order to obtain significative data of statistic relevance, this research should be continued in the future to provide data on the influence of commercial fishing and other phenomena and to gain more information concerning the selectivity

of fishing equipment.

In this way it would be possible to set up a plan for the rational management of fishing resources protecting at the same time the marine vertebrates (cetaceans and turtles) of no fishing importance.



SPA G. G. A. M. E. N. T. I.
 NEL PERIODO APRILE '87 - MARZO '90

- T *Tursiops truncatus*
- S *Stenella coeruleoalba*
- G *Grampus griseus*
- P *Delphinus podiceps*
- P *Phocoena mascofipolis*

LEGENDA:

1	SC	/	GALLIPOLI (LE)	01.04.87	/	NO RECOVERED	I
2	SC	M	TAVIANO (LE)	04.04.87	201	AUTOPSY	I
3	SC	/	OSTUNI (BR)	10.04.87	/	/	A
4	SC	M	MANDURIA (TA)	11.04.87	200	AUTOPSY	I
5	SC	F	MOLA DI BARI (BA)	14.04.87	165	AUTOPSY 1	A
6	SC	F	GALLIPOLI (LE)	25.04.87	163	AUTOPSY	I
7	SC	M	S. FOCA (LE)	29.04.87	/	NO RECOVERED	A
8	TT	/	MOLA DI BARI (BA)	11.05.87	320	DESTROYED	A
9	DELF.	/	OSTUNI (BR)	11.05.87	/	BURIED	A
10	DELF.	/	OSTUNI (BR)	14.05.87	/	DESTROYED	A
11	GG	/	S. GENNARO (BR)	06.06.87	300	NO RECOVERED	A
12	SC	F	M. DI PULSANO (TA)	07.06.87	170	BURIED	I
13	TT	F	MONOPOLI (BA)	24.06.87	280	DESTROYED	A
14	SC	/	T. PALI (LE)	18.07.87	/	NO RECOVERED	A
15	GG	/	FELLINE (LE)	19.07.87	125	CONGEALED	I
16	DELF.	M	PESCHICI (FG)	04.08.87	200	BURIED	A
17	DELF.	/	ZAPPHONEA (FG)	19.08.87	/	BURIED	A
18	TT	M	CAPITOLI (BA)	10.09.87	245	DESTROYED	A
19	DELF.	/	CAMPOMARINO (TA)	27.09.87	/	AUTOPSY	I
20	DELF.	/	S. PIETRO IN B. (TA)	27.09.87	/	AUTOPSY	I
21	SC	F	TRANI (BA)	06.11.87	155	AUTOPSY 7	A
22	TT	M	BARI	12.12.87	186	AUTOPSY 2	A
23	TT	M	BARI	21.12.87	201	AUTOPSY 3	A
24	SC	M	GIANCOLA (BR)	23.12.87	142	NO RECOVERED	A
25	TT	F	BARLETTA (BA)	17.01.88	179	AUTOPSY 4	A
26	SC	F	S. CATALDO (LE)	24.01.88	180	/	A
27	SC	F	CASTELLANETA M. (TA)	08.03.88	110	/	I
28	TT	M	M. DI LESINA (FG)	11.03.88	230	AUTOPSY	A
29	TT	M	MONOPOLI (BA)	21.03.88	230	AUTOPSY 10	A
30	TT	M	MANFREDONIA (FG)	02.06.88	271	/	A
31	GG	M	TARANTO	02.06.88	255	AUTOPSY 14	I
32	TT	M	P. TA ROSSA (FG)	04.06.88	271	DESTROYED	A
33	GG	M	NARDO' (LE)	26.06.88	350	DESTROYED	I
34	TT	/	CASTELLANETA M. (TA)	03.07.88	/	/	I
35	TT	/	BARLETTA (BA)	07.07.88	110	PRESERVED	A
36	SC	M	BRINDISI	13.07.88	130	DESTROYED	A
37	/	/	BRINDISI	18.07.88	110	DESTROYED	A
38	/	/	PORTO PIERRONE (TA)	19.07.88	/	/	I
39	SC	/	GANDOLI (TA)	19.07.88	/	/	I
40	TT	M	TORRE MILETO (FG)	19.07.88	260	DESTROYED	A
41	TT	F	TORRE GUACETO (BR)	27.07.88	283	AUTOPSY	A
42	GG	M	T. ULUZZI (LE)	27.06.88	420	/	I
43	TT	/	MOLA DI BARI (BA)	02.08.88	150	DESTROYED	A
44	SC	M	T. DELL'ORSO (LE)	11.08.88	92	CONGEALED	A
45	SC	/	OTRANTO (LE)	16.08.88	/	CONGEALED	A
46	SC	/	CESINE (LE)	19.08.88	120	DESTROYED	A
47	/	/	LEPORANO (TA)	23.08.88	/	/	I
48	TT	M	LESINA (FG)	10.09.88	305	DESTROYED	A
49	TT	F	OSTUNI (BR)	26.09.88	270	AUTOPSY 5	A
50	TT	F	GIANCOLA (BR)	08.10.88	180	DESTROYED	A
51	TT	F	MOLA DI BARI (BA)	09.10.88	335	DESTROYED	A
52	SC	F	VILLANOVA (BR)	10.11.88	190	DESTROYED	A
53	TT	/	TORRE CANNE (BR)	26.11.88	216	AUTOPSY 9	A
54	TT	F	BARLETTA (BA)	10.12.88	190	AUTOPSY 6	A
55	TT	F	VARANO (FG)	18.01.89	242	AUTOPSY 13	A
56	TT	M	TORRE A MARE (BA)	07.02.89	280	AUTOPSY 12	A
57	TT	F	BRINDISI	09.02.89	190	/	A
58	TT	/	LESINA (FG)	12.03.89	220	DESTROYED	A
59	ODONT.	/	MARUGGIO (TA)	25.04.89	/	/	I
60	ODONT.	/	CASTELLANETA M. (TA)	30.04.89	/	CONGEALED	I
61	ODONT.	/	S. MARIA AL BAGNO (LE)	18.05.89	200	CONGEALED	I
62	TT	/	MOLFETTA (BA)	29.05.89	300	DESTROYED	A
63	SC	M	TORRE OVO (TA)	27.06.89	185	DESTROYED	I
64	TT	F	MOLA DI BARI (BA)	16.07.89	265	DESTROYED	A
65	ODONT.	/	OSTUNI (BR)	27.07.89	200	STOLEN	A
66	TT	M	POLIGNANO (BA)	28.07.89	245	DESTROYED	A
67	TT	/	BARI	29.07.89	300	DESTROYED	A
68	SC	/	BRINDISI	02.08.89	/	DESTROYED	A
69	SC	/	BRINDISI	04.08.89	/	DESTROYED	A
70	ODONT.	/	MOLA DI BARI (BA)	09.08.89	PARM	DESTROYED	A
71	SC	/	T. COLUMENA (LE)	28.08.89	160	CONGEALED	I
72	TT	M	BARI	08.09.89	290	DESTROYED	A
73	TT	M	TRANI (BA)	25.09.89	157	DESTROYED	A
74	TT	/	MOLFETTA (BA)	07.10.89	270	DESTROYED	A
75	SC	M	TORCHIAROLO (BR)	24.10.89	200	/	A
76	ODONT.	/	TORCHIAROLO (BR)	05.11.89	/	/	A
77	SC	F	MARUGGIO (TA)	16.12.89	200	AUTOPSY 4/90	I
78	TT	/	POLIGNANO (BA)	27.01.90	243	AUTOPSY 1/90	A
79	TT	M	LESINA (FG)	04.03.90	200	AUTOPSY 3/90	R
80	TT	M	PILONE (BR)	11.03.90	190	AUTOPSY 2/90	A
81	TT	/	TORRE GUACETO (BR)	19.03.90	204	DESTROYED	A
82	SC	F	S. PIETRO IN B. (TA)	27.03.90	140	AUTOPSY 4/90	I
83	SC	F	M. DI LEPORANO (TA)	04.04.90	201	AUTOPSY 5/90	I
84	GG	/	GALLIPOLI (LE)	/	/	DESTROYED	I
85	GG	/	GALLIPOLI (LE)	/	/	DESTROYED	I