

Meeting of the GFCM sub-committee on Environment and Marine Ecosystems

FAO, Rome 11-14 September 2006

Summary of interactions between cetacean and fisheries within the ACCOBAMS area

Note: for the compilation of this form, please see the example in the annexe.

Compiled by:

Interactions, species and gear:

Please identify only one gear per species. Add more rows if needed (See annex).

Species involved (species code)	Bycatch	Depredation	Competition	Positive interaction	Gear type (code)  <i>See Table 1</i>	Area concerned	Source or Contact (Name/Institution and email)
Fin whale (Bp)							
Sperm whale (Pm)							
Long-finned pilot whale (Gm)							
Cuvier's beaked whale (Zc)							
Killer whale (Oo)							
Risso's dolphin (Gg)							
Bottlenose dolphin (Tt)							
Common dolphin (Dd)							
Striped dolphin (Sc)							
Harbour porpoise (Pp)							

Definitions: "Bycatch": incidental catches; "Depredation": fish removal from gears by cetaceans; "Competition": exploitation of the same resources by both cetaceans species and fisheries; "Positive interaction": for example, any cooperative behaviour between cetaceans and fishermen during fishing/hunting.

Please, check the relevant box above species and gears for which interactions have been observed, with reference to the related source or contact person. Use FAO codes as in Table 1 and add missing species or additional row for species that shows interactions with multiple gears, when needed (see example in the annex). The species code for cetaceans is the initial of **G**enus and **s**pecies (for example, *Tursiops truncatus* = Tt).

Table 1 - FAO FISHING DESCRIPTION AND CODES

<b>FAO FISHING GEAR CATEGORIES:</b>			
<b><i>SURROUNDING NETS</i></b>		<b><i>FALLING GEAR</i></b>	
With purse lines	PS	Cast nets	FCN
One-boat operated purse seines	PS1	Falling gear (not specified)	FG
Two-boat operated purse seines	PS2	<b><i>GILLNETS AND ENTANGLING GEAR</i></b>	
Without purse lines (lampara)	LA	Set gillnets (anchored)	GNS
<b><i>SEINE NETS</i></b>		Driftnets	GND
Beach seines	SB	Encircling gillnets	GNC
Boat seines	SV	Fixed gillnets (on stakes)	GNF
Danish seines	SDN	Trammel nets	GTR
Scottish seines	SSC	Combined gillnet-trammel nets	GTN
Pair seines	SPR	Gillnets and entangling gillnets (not specified)	GEN
Seine nets (not specified)	SX	Gillnets (not specified)	GN
<b><i>TRAWLS</i></b>		<b><i>TRAPS</i></b>	
Bottom trawls	TBB	Stationary uncovered pounds nets	FPN
Beam trawl	OTB	Pots	FPO
Otter trawls (side or stern)	PTB	Fyke nets	FYK
Pair trawls	TBN	Stow nets	FSN
Nephrops trawls	TBS	Barriers, fences, weirs, etc	FWR
Shrimp trawls (not specified)	TM	Aerial traps	FAR
Midwater trawls		Traps (not specified)	FIX
Otter trawls (side or stern)	OTM	<b><i>HOOKS AND LINES</i></b>	
Pair trawls	PTM	Handlines and pole-lines (hand operated)	LHP
Shrimp trawls	TMS	Handlines and pole-lines (mechanised)	LHM
Midwater trawls (not specified)	TM	Set longlines	LLS
Otter twin trawls	OTT	Drifting longlines	LLD
Otter trawls (not specified)	OT	Longlines (not specified)	LL
Pair trawls (not specified)	PT	Trolling lines	LTL
Other trawls (not specified)	TX	Hooks and lines (not specified)	LX
<b><i>DREDGES</i></b>		<b><i>GRAPPLING AND WOUNDING</i></b>	
Boat dredges	DRB	Harpoons	HAR
Hand dredges	DRH	<b><i>HARVESTING MACHINES</i></b>	
<b><i>LIFT NETS</i></b>		Pumps	HMP
Portable lift nets	LPN	Mechanised dredges	HMD
Boat-operated lift nets	LNB	Harvesting machines (not specified)	HMX
Shore operated stationary lift nets	LNS	<b><i>MISCELLANEOUS GEAR</i></b>	MIS
Lift nets (not specified)	LN	<b><i>RECREATIONAL FISHING GEAR</i></b>	RG
		<b><i>GEAR NOT KNOWN OR NOT SPECIFIED</i></b>	NK
		<b><i>SHARK CONTROL NETS</i></b>	NSC

For more details, explanations and figures, please check at the FAO official web page: [http://www.fao.org/figis/servlet/static?dom=root&xml=tech/gears\\_search.xml](http://www.fao.org/figis/servlet/static?dom=root&xml=tech/gears_search.xml)

**Ancillary Documentation for the given area/s of interaction:**

Please, give more detail on the available information for each species of cetacean involved in the interaction. Copy and paste the table for each species (See example, in the Annex)

<b>Population status of: (<i>Species name</i>)</b>	
- Distribution	
- Absolute Abundance	
- Relative Abundance	
- Other	
<b>Extent of the interaction (qualitative and quantitative, if possible)</b>	
- Damage to: ( <i>Species name</i> )	
- Damage to fishery	
- Positive interaction (details)	
<b>Fishery status</b>	
- Fishing gear (FAO code)	
- Fishing area/s	
- Fleet size	
- Average boat size	
- Fishery season	
- Average annual effort (days)	
<b>Fish stock status</b>	
- Distribution	
- Abundance	
- Other	

**Peer-reviewed papers and grey literature (unpublished papers, including proceedings) published on the presented study:**

## ANNEX

### EXAMPLE FOR EXPLANATORY PURPOSES ONLY

#### Compiled by:

Mr. Chedly Rais

#### Interactions, species and gear:

Please identify only one gear per species. Add more rows if needed (See annex).

Species involved (species code)	Bycatch	Depredation	Competition	Positive interaction	Gear type (code) <i>See Table 1</i>	Area concerned	Source or Contact (Name/Institution and email)
Sperm whale (Pm)	X				GND	Bay of Monaco	Pace et al. 2004
Killer whale (Oo)			X		LL	All the coasts	De Stefanis (CIRCE, Spain, email @email)
Bottlenose dolphin (Tt)		X			GTR		Lauriano et al. 2004

*Definitions: "Bycatch": incidental catches; "Depredation": fish removal from gears by cetaceans; "Competition: exploitation of the same resources by both cetaceans species and fisheries"; "Positive interaction": for example, any cooperative behaviour between cetaceans and fishermen.*

Please, check the relevant box above species and gears for which interactions have been observed, with reference to the related source or contact person. Use FAO codes as in Table 1 and add missing species or additional row for species that shows interactions multiple gears, when needed (see example in the annex).

**Ancillary Documentation for the given area/s of interaction:**

Please, give more detail on the available information for each species of cetacean involved in the interaction. Copy and paste the table for each species (See example, in the Annex)

<b>Population status of: (<i>Physeter macrocephalus</i>)</b>	
- Distribution	Widely distributed along the coasts of the Country
- Absolute Abundance	Unknown
- Relative Abundance	Unknown
- Other	
<b>Extent of the interaction (qualitative and quantitative, if possible)</b>	
- Damage to:	Bycatch of <i>Physeter macrocephalus</i> in sword illegal fishery
- Damage to fishery	
- Positive interaction (details)	
<b>Fishery status</b>	
- Fishing gear (FAO code)	GND (Illegal)
- Fishing area/s	Tyrrhenian sea
- Fleet size	Unknown
- Average boat size	Unknown
- Fishery season	All year
- Average annual effort (days)	Unknown
<b>Fish stock status</b>	
- Distribution	
- Abundance	
- Other	

<b>Population status of: (<i>Orcinus orca</i>)</b>	
- Distribution	Regular in the Strait of Gibraltar and adjacent Atlantic waters
- Absolute Abundance	31
- Relative Abundance	-
- Other	
<b>Extent of the interaction (qualitative and quantitative, if possible)</b>	
- Damage to: ( <i>Species name</i> )	<i>Thunnus thynnus thynnus</i>
- Damage to fishery	Removal of part or entire tunas from hooks (17% of the catches, in number of fish, per year)
- Positive interaction (details)	
<b>Fishery status</b>	
- Fishing gear (FAO code)	LL
- Fishing area/s	Gibraltar strait
- Fleet size	## boats (Spanish fleet), ## boats (Moroccan fleet)
- Average boat size	NA
- Fishery season	NA
- Average annual effort (days)	NA
<b>Fish stock status</b>	
- Distribution	NA
- Abundance	NA
- Other	

**Population status of: (*Tursiops truncatus*)**

- Distribution	NE Sardinia
- Absolute Abundance	22 (95% CI 22-27)
- Relative Abundance	-
- Other	
<b>Extent of the interaction (qualitative and quantitative, if possible)</b>	
- Damage to:	<i>Mullus surmuletus</i>
- Damage to fishery	About 1,000 Euro per year
- Positive interaction (details)	
<b>Fishery status</b>	
- Fishing gear (FAO code)	GTR
- Fishing area/s	NE Sardinia
- Fleet size	21
- Average boat size	7.36
- Fishery season	September-December
- Average annual effort (days)	NA
<b>Fish stock status</b>	
- Distribution	
- Abundance	
- Other	

**Peer-reviewed papers and grey literature (unpublished papers, including proceedings) published on the presented study:**

- De Stephanis R., Verborgh, P., Pérez Gimeno, N., Sánchez Cabanes, A., Pérez Jorge, S., Esteban Pavo, R., Séller, N., Urquiola, E., Guinet, C., 2005, "Impactos producidos por el tráfico marítimo en las poblaciones de cetáceos en el estrecho de Gibraltar. Situación actual y previsiones de futuro", Dirección General para la Biodiversidad del Ministerio de Medio Ambiente. 140pp
- De Stephanis, R., Guinet, C., Buisson, L., Verborgh, P. and Dominici, P. 2005. Population status, social organisation and feeding strategies of killer whales (*Orcinus orca*) in the Strait of Gibraltar. 19th Annual Conference of the European Cetacean Society. La Rochelle, France. April 2-7.
- De Stephanis R, Perez Gimeno N, Salazar Sierra J, Poncelet E. and Guinet C. 2002. Interactions between killer whales (*Orcinus orca*) and red tuna (*Thunnus thynnus*) fishery in the Strait of Gibraltar Fourth International Orca Symposium and Workshop, France, p 138-142
- Pace, D. S., Miragliuolo, A., Mussi, B. 2005. Behaviour of a nursery group of entangled sperm whale (Capo Palinuro, Southern Tyrrhenian sea, Italy). *European Research on Cetaceans* 19.
- Lauriano, G., Fortuna, C.M., Moltedo, G., Notarbartolo di Sciarra, G. 2004. Interaction between common bottlenose dolphin (*Tursiops truncatus*) and the artisanal fishery in Asinara island National Park (Sardinia): assessment of catch damage and economic loss. *Journal of Cetacean Research and Management* 6(2):165-173.