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Cruise Report COMHAFAT CetaceanSurvye 2023

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CETACEAN SIGHTING SURVEY IN THE COASTAL WATERS OF NORTHWESTERN AFRICA (GUINEA BISSAU, GUINEA, AND SIERRA LEONE)

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By

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CETACEAN SIGHTING SURVEY IN THE NORTHWESTERN AFRICA COASTAL WATERS (GUINEA BISSAU, GUINEA AND SIERRA LEONE) IN 2022 AND 2023

Abstract

The fourth cetacean sighting survey in the Northwestern COMHAFAT coastal waters (Guinea Bissau, Guinea and Sierra Leone) took place in December 30, 2022 to January 09, 2023. It was carried out with N/O GENERAL LANSANA CONTE by the Centre National des Sciences Halieutiques of Boussoura (CNSHB) under the auspices of COMHAFAT, with the collaboration of some African fisheries institutions and fisheries research centers such as the IMROP of Nouadhibou in Mauritania, the CRODT of Dakar in Senegal, and the CIPA of Bissau in Guinea Bissau and Ministry of Fisheries and Marine Resources, Freetown, Sierra Leone. During this survey 721.3 nautical miles (nm) of line transects were covered, 5419 individuals of cetacean species for 17 schools and 5 species were sighted. In terms of schools and individuals, there were 6 schools of 2505 animals of Short finned pilot whale, 2 school of 350 animals of Pantropical spotted dolphin, 4 school of 547 animals of Common dolphin, 3 school of 2017 animals of Bottlenose dolphin, 1 school of 20 unidentified dolphins.

INTRODUCTION

It is within the framework of the continuation of its objectives on the studies of living marine resources including cetaceans in the coastal waters of the member states, that ATLAFCO/COMHAFAT has agreed to fund this cetacean sighting survey in the coastal waters of Guinea Bissau, Guinea and Sierra Leone.

It is recognized that in the eastern Atlantic, the ATLAFCO/COMHAFAT coastal area, studies on cetaceans are relatively recent. They practically started in 2002. From this date until now, cetacean sighting surveys are carried out almost every year, with the help of ATLAFCO/COMHAFAT, for the estimation of abundances and the distribution of species.

ATLAFCO/COMHAFAT has carried out 3 surveys in the coastal waters of the Eastern Atlantic, the firs in 2018 t one in Gabon in 2011 and the second one in the Gulf of Guinea in 2013. The third one in the coastal zone of Guinea, Sierra Leone and Liberia. This is the fourth survey in the coastal waters of Guinea Bissau, Guinea and Sierra Leone.

This fourth survey, like the previous ones, was carried out by the National Center for Fishery Sciences of Boussoura (CNSHB) in collaboration with fisheries research and management institutions of ATLAFCO/COMHAFAT member countries such as the IMROP of Nouadhibou in Mauritania, the Oceanographic Research Center of Dakar Senegal, the Centro de Investigação Pesqueira Aplicada (CIPA) of Guinea Bissau and the Ministry of Fisheries and Marine Resources, Freetown, in Sierra Leone

Cetacean sighting surveys must be planned and executed at the times when sightings meet the best meteorological sighting conditions, i.e., the best seasonal conditions. Since cetaceans are migratory species seeking warm waters, the surveys are most often planned in the dry season like the previous surveys. It is at that time these species are encountered a lot.

These studies on cetaceans are very important for African countries, as they provide solid scientific information that can help them make good decisions for the sustainable management of their living marine resources, including cetaceans.

OBJECTIVES OF THE SURVEY

The main objective of this survey is to obtain information on the abundance and the distribution of the cetaceans in coastal waters of the COMHAFAT countries. In the other hand the specific objectives are:

- To train the African researchers on the methods of evaluation of cetacean resources;
- To obtain information on the abundance and the distribution of the cetaceans which are the top predators in the marine ecosystem in the coastal waters of the COMHAFAT countries;
- To observe the behavior of the schools and record, if possible, the sounds emitted by the cetaceans;
- To collect data on marine environment and on the sighting activities, used for cetacean resources assessment;
- To take photographs and films of the species, for their identification.

MATERIAL AND METHOD

The N/O GENERAL LANSANA CONTE research vessel from Guinea was used for the survey. The vessel has 29.93 m in length, 3.25 m draught, 1400 CV horse-power, 198 tons GRT, and 19 people crow members and scientists (Figure 1). Other material used are:

- Binoculars: CANON ® 8 X 32 XP with 7.5° and NIKON ® 7 X 50 with 7.3°;
- Identification Keys for cetaceans of Carwardine (1995) and Jefferson et al., (1993);
- Classical and digital cameras;
- Video camera;
- Reporters for reading the angles of sightings;
- Action and weather forms.

SURVEY DESIGN AND METHODOLOGY.

Pre-survey meeting:

This cetacean survey started with a training session for researchers from the National Center for Fisheries Sciences of Boussoura (CNSHB) in Conakry in Guinea and representatives from African institutions such as IMROP in Nouadhibou in Mauritania, the Center for Oceanographic Research in Dakar Senegal, the Centro de Investigação Pesqueira Aplicada (CIPA) of Guinea Bissau and the Ministry of Fisheries and Marine Resources, Freetown, Sierra Leone

During this pre-survey meeting, Mr. Diallo Samba. T., coordinator of the cetacean research program gave lectures on the methods and processes of cetacean sightings. He explained how to conduct the survey and how to collect data/samples, (planning and execution of cetacean sighting surveys), the identification of cetacean species from animals obtained from sightings using the method of lines transects methods recognized by the IWC (IWC/IDCR and SOWER).

Survey area

The research area is set in coastal waters of western North Africa, mainly off Guinea Bissau, Guinea and Sierra Leon (Fig.2). In the cetacean sighting surveys conducted in Northwestern Africa from 2002-2008 till 2018, many sightings were recorded at waters along isobaths of 200 m and 1,000 m. Shallow waters with depths less than 20 m and oil fields are excluded from the area, for safe sailing. Cruise track design are undertaken using 'Distance program (ver. 7.0)'. The randomly selected starting point (WP1) is followed by zigzag track lines with 1,013.2 nautical miles (Fig 3 and Table 1)

In the area, four survey blocks are placed. They are blocks A, B, C, and D. In the blocks, zigzag track lines with 1013.0 nm of length are set (Fig. 3). The waypoints of provisional track lines are from the waypoint 1 (WP1) to waypoints 9 (WP 9) and are placed on the study area. The coordinates of these waypoints are in the table 1 below (Table 1).

Table 1. Coordinates of the survey blocks and of waypoints of provisional track lines set for the COMHAFAT cetacean sighting survey conducted in winter 2022.

Point No.	Lat.		Long.	
A	12-22.0	N	16-45.5	W
B	10-34.5	N	19-42.0	W
C	6-41.0	N	15-37.0	W
D	9-05.0	N	13-17.5	W
WP1	12-09.0	N	17-05.7	W
WP2	10-04.0	N	19-10.0	W
WP3	10-48.0	N	16-36.3	W
WP4	10-37.0	N	16-09.9	W
WP5	8-50.3	N	17-52.6	W
WP6	9-51.7	N	14-24.5	W
WP7	9-51.0	N	14-23.1	W
WP8	7-36.5	N	16-35.3	W
WP9	7-48.6	N	14-31.6	W

Survey period

A 15-days survey period is set from December 2022 to January 2023. In the western North Africa, it is dry season in winter. Rain is scarce and wind is not so strong. Thus, this season is thought to be suitable for cetacean sighting survey. Furthermore, it is expected that baleen whales migrate to the low latitudinal waters in winter. The survey is carried out on day time with good weather conditions (Beaufort wind scale of 3 or less and greater than 2 nautical miles in visibility).

Sighting research

The survey is conducted in accordance with the line transect method. The normal closing mode survey is carried out, in which closing made is for all cetacean species encountered at searching. Searching is conducted, following the procedure and protocol used in the IWC/IDCR and SOWER cruises (Matsuoka et al. 2003) and in COMHAFAT 2011 and 2013 and 2018 surveys (Diallo et al. 2013, 2018).

Figure 1. The research vessel "GENERAL LANSANA CONTE" used during the Cetacean sighting survey for COMHAFAT in 2022/23.

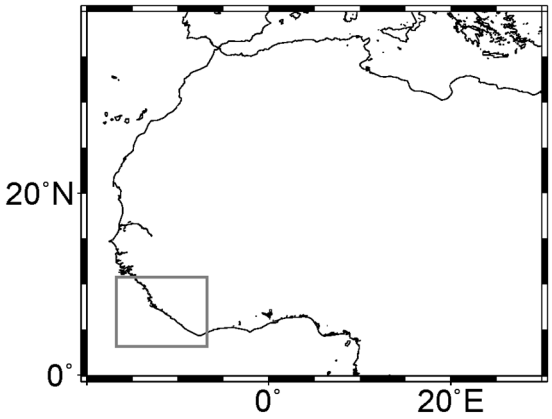


Figure 2. Study area on the Northwestern COMHAFAT coastal waters

Figure 3. The track lines with 1013.2 mn of length placed in the study area for the cetacean sighting survey for COMHAFAT in 2022 et 2023.

METHODOLOGY OF SIGHTING

In the vessel, the researchers are positioned in two places, above the pilot cabin and at the level of the upper tower located above the pilot cabin (see appendices). From these two places they search cetaceans on the water surface of the sea with the naked eye and/or using binoculars.

As before, sightings are made during the day time. They start every morning at 8:30 a.m. and end in the afternoon at 6:00 p.m. in good weather conditions (maximum wind speed less than 10 m/s, i.e., a level of 3 to 4 on the Beaufort scale, minimum visibility 2.0 nautical miles). The research vessel follows the transect lines at a speed of 8 to 10 knots. When the weather conditions are not suitable, the sightings are stopped, then the vessel floats or anchors and/or sails following the direction of the transect line without sighting. When the weather conditions become suitable again, the sightings begin again.

As always, two types of sightings are made: primary sightings and secondary sightings. Primary sightings are those made in the direction of the transect line, while secondary sightings are those made outside the transect line.

For this survey, only primary sightings were made.

Cetaceans emit signals at the surface of the water by blowing or jumping. With regard to the jumps the animals can show their whole body or a part of it or even produce splashes.

Each time cetaceans are reported, the angle of sightings is determined from the compasses fixed on the sighting table as well as the distance separating the vessel from the animals. Thus, the vessel sails towards them to be able to identify them (families, genus, species if possible), count them, take photographs and/or films.

SURVEY PROGRESS

Wednesday, December 28, 2022

At 7:00 p.m., 7 scientists of African nationalities and the crew members, a total of 19 people for the sighting area, boarded the research vessel N/O General Lansana Conté. The vessel arrived on the night of Thursday December 29, 2022 at the starting point of the survey at the position of 12°09'00 N - 17°05.700'W in the Guinea Bissau coastal waters and anchored there until morning.

Friday, December 30, 2022

sighting operations started at 8:30 a.m. under good weather conditions from WP1 to WP2. The distance to be covered was 175 nautical miles under overcast skies and reduced visibility.

At 5:17 p.m., one (1) school of pilot whale (*Globicephala macrorhynchus*) was sighted, about 100 individuals at the position of 11°80'N/ 18°50'W, at the visibility of 7.0 and at the water temperature of 27.44°C. These animals were swimming in front of the vessel for some time and eventually disappeared. This day, there were not many sightings.

Saturday, December 31, 2022

At 9:15 a.m., one (1) school of 50 individuals of Short-finned pilot whale (*Globicephala macrorhynchus*) was sighted, at the position of 11°02'98 N - 18°10'.1 W. The visibility was 5.0 and the sea surface temperature was 27.55°C. These animals were swimming gently in front of the vessel.

At 1:40 p.m., one (1) school of 60 individuals of Short-finned pilot whale (*Globicephala macrorhynchus*) was sighted, at the position of 10°37'N - 18°36' W and at the depth of 4580 m. The visibility was 7.0 and the sea surface temperature was 27.80°C. These animals were swimming gently around the vessel.

Sunday 01 January 2023

There were no cetacean sightings on this day.

Monday 02 January 2023

At 8:35 a.m., one (1) school of 30 individuals of Common dolphin (*Delphinus delphis)* and one (1) school of 25 individuals of Short-finned pilot whale (*Globicephala macrorhynchus*) were sighted at the position of 10°20'.30 N-17°48' .28 W, and at the depth of 3600 m. The visibility was 7.0 and the sea surface temperature, 28.50°C. These animals were in association *Delphinus delph*is and *Globicephala macrorhynchus* and they were swimming freely together around the vessel.

At 8:57 a.m., one (1) school of 2 individuals of Common dolphin *Delphinus delphis* was sighted at the position of 10°28'.88 N-17°44'.86 W. The visibility was 7.0 and the sea water surface temperature was 26.99 °C. These 2 animals were swimming freely around the vessel and they disappeared after a while.

At 9:15 a.m., a school of about 20 individuals of *Stenella sp*. was sighted at the position of 10°29'.47 N-17°42'.17 W. The visibility was 7.0 and the sea water temperature was 26.91°C. These animals were swimming quickly in front of the vessel so that they couldn't be identified to the species to know if they are *S. frontalis* or *S. attenuata* or another species of *Stenella*. But the spots were clearly seen on their bodies. So, that's the reason they are spotted dolphins.

At 9:15 a.m., one (1) school of about 200 individuals of Short-finned pilot whale (*Globicephala macrorhynchus*) was sighted, at the position of 10°30'.10 N-17°38'.78 W. The visibility was 7.0 and the sea surface temperature, was 26.90°C. These animals were swimming freely in front of the vessel. This number of 200 individuals was estimated because they were many.

Tuesday 03 January 2023

At 8:38 a.m., a school of two (2) individuals of Common Dolphin (*Delphinus delphis*) was sighted at the position of 10°44'.04 N-16°28'098 W. The visibility was 7.0 and the sea water temperature 26.95°C. These 2 animals were swimming freely in front of the vessel.

At 2:51 p.m., a school of 20 Short finned pilot whale (*Globicephala macrorhynchus*) was sighted at the position of 10°10'.44 N-16°34'61 W. The visibility was of 7.0 and the sea water temperature of 26.66°C. These animals were swimming freely in front of the vessel.

At 3:01 p.m., a school of 15 individuals of Bottlenose dolphin (*Tursiops truncatus*) was sighted at the position of 10°9'.00 N-16°34'98 W and at the depth of 123 m. The visibility was 7.0 and the sea water temperature was 28.10°C. These animals were swimming in front of the vessel.

At 3:29 p.m., a school of 12 individuals of Common dolphin (*Delphinus delphis*) was sighted at the position of 10°80'.11 N-16°37'91 W, and the water depth of 132 m. The visibility was 7.0, The sea water temperature was 28.25°C. These animals were swimming and approaching the vessel for a certain distance and disappeared. They were even jumping in the air.

Wednesday 04 January 2023

At 11:18 a.m., a school of about 100 individuals of Bottlenose dolphin (*Tursiops truncatus*) was sighted at the position of 09°34'.58 N-17°7'.41 W, and at the depth of 162 m. The visibility was 7.0 and the sea water temperature was 28.20°C. This number of 100 individuals was estimated because they were many and swimming all over around the vessel. Others were swimming freely in front of and under the vessel and jumping in the air.

At 1:10 p.m., a school of about 1500 individuals of Bottlenose dolphin (*Tursiops truncatus*) was sighted at the position of 09°24'.65 N-17°18'.00 W, and at the depth of 719 m. The visibility was 7.0 and the sea water temperature 28.79°C. Like the previous ones, this number of 1500 individuals was estimated. These animals were swimming all over the vessel and others were swimming freely in front of the vessel and jumping in the air.

At 2:27 p.m., a school of 400 individuals of Bottlenose dolphin (*Tursiops truncatus*) was sighted at the position of 09°22'.33 N-17°27'.05 W and at the depth of 1348 m. The visibility was 7.0 and the sea water temperature 29.02°C. This number was estimated at 400 individuals because they were many swimming around the vessel.

Thursday 05 January 2023

At 10:43 a.m., a school estimated around 500 individuals of common dolphin (*Delphinus delphis*) was sighted at the position of 08°54'.406 N-17° 41'.76 W, and at the depth of 1244 m. The visibility was 7.0 and the sea water temperature was 29.36°C/82.36°F. These animals were swimming all over around the vessel.

At 2:12 p.m., a school estimated about 1500 individuals of Short-finned pilot whale (*Globicephala macrorhynchus*) was sighted at the position of 09°20'.16 N-17°12'68 W and at the depth of 1405

m. The temperature of the sea water was 28.75°C. The visibility was 7.0. These animals were swimming around the vessel.

Friday 06 January 2023

At 10:13 a.m., a school of 50 individuals of Pantropical spotted dolphin (*Stenella attenuata*) was sighted at the position of 09°16'.94 N-16°20'.07 W, and at the depth of 3270 m. The sea water temperature was 29.71°C, and the visibility 7.0. These animals were swimming around the vessel and sometime jumping in the air. On the body of the animal there is a shadow zone below the dorsal fin and there are spots on the body of the animals.

At 10:24 a.m., a school of 120 individuals of Pantropical spotted dolphin (*Stenella attenuata*) was sighted at the position of 09°17'.51 N-16°21'.20 W, and at the depth of 854 m. The sea water temperature was 29.07°C, and the visibility was 7.0. These animals were swimming around and under the vessel. As before, this number of 120 was estimated.

At 10:38 a.m., a school of 100 individuals of Pantropical spotted dolphin (*Stenella attenuata*) was sighted at the position of 09°16'.94 N-16°20'.07 W, and at the depth of 854 m. The sea water temperature was 29.12°C, the visibility was 7.0. These animals were swimming around the vessel. This number of 120 was estimated.

At 1:55 p.m., a school of 50 individuals of Short-finned pilot whale (*Globicephala macrorhynchus*) was sighted at the position of 09°26'.11 N-15°50'90 W and at the depth of 854 m The sea water temperature was 29.29° C. The visibility was 7.0. These animals were swimming near the vessel.

Saturday 07 January 2023

At 2:15 p.m., a school of 2 individuals of Bottlenose dolphin (*Tursiops truncatus*) was sighted at the position of 09°54'.16 N-14°27'.06 W, and at the depth of 263 m. The visibility was 7.0 and the temperature of sea water 28.70°C. These 2 individuals were swimming in front of the vessel, but after a few minutes they disappeared.

At 5:35 p.m., a school of 60 individuals of Bottlenose dolphin (*Tursiops truncatus*) was sighted at the position of 09°37'.03 N-14°39'.15 W, and at the depth of 325 m. The visibility was 7.0 and the temperature of sea water 28.90°C. These animals were swimming in front of the vessel and some of them even were swimming in front of the vessel and others were jumping in the air.

Sunday 08 January 2023

From 8:30 a.m. until 4:20 p.m. there were no sightings. Due to the bad weather conditions, the sightings were stopped to see if the weather conditions may become suitable again. But unfortunately, the weather conditions got worse until nightfall. The vessel was stopped but strongly shacked by the storm with strong waves. This day there were no sightings because of the bad weather conditions.

Monday 09 January 2023

At 2:35 a.m., given the fact that the storm was getting bigger and worse, the Commander decided that it was necessary to return back the vessel to the port of Conakry. He arrived there at 7:20 p.m. the same day. Thus, the survey ended at that day with great concern.

Tuesday, January 10, 2023

The post-survey meeting took place that day in the conference room of the Centre National des Sciences Halieutiques de Boussoura (CNSHB) under the chairmanship of the Director General of the Center.

RESULTS AND DISCUSSIONS

The cetacean sighting survey, aboard the N/O General Lansana Conte, in the coastal waters of ATLAFCO countries (Guinea Bissau, Guinea, Sierra Leone) took place in December 2022 and January 2023. A distance of 721.3 nm was covered (Table 2). The total of the study area was not covered because of the bad weather conditions.

In the planning of the survey, a period of 15 days of sighting was planned, but because of the bad weather conditions, only 14 days were covered, including 10 days of sightings, in addition to the days of sailing going to the starting point and coming back to the port of Conakry. It should be noted that for this survey, the weather conditions were very unsuitable both for sighting and for the navigation itself.

Despite this unsuitable situation, the rest of the time allowed the researchers to sight and count 5419 individuals for 17 schools of cetacean species including five (5) identified species and one (1) unidentified species (Table 3). These are among others:

Short-finned pilot whale: *Globicephala macrorhynchus*

For this species, 7 schools of 2505 individuals were sighted in primary sighting and there was no secondary sighting. In terms of representativeness, this species comes first with 46.23% of the all the sightings.

Bottlenose Dolphin: *Tursiops truncatus*

Concerning this species, 2017 individuals for 3 schools were sighted in primary sighting, while no individual was sighted in secondary sighting. This species comes in second position for the whole sightings and has 37.22%

Common dolphin: *Delphinus delphis*

For this species, 4 schools of 547 individuals were sighted in primary sighting. There were no secondary sightings. It represents 10.06% of the sightings and therefore comes third position among the whole sightings.

Pantropical Spotted Dolphin: *Stenella attenuata*

Regarding to this species, two (2) schools of 330 individuals were sighted in primary sighting. This species also was not sighted in secondary sighting. It represents 6.09% of the whole sightings. She thus comes in fourth position.

Undetermined dolphins: *Stenella sp*.

With regard to undetermined dolphins, only one (1) school of 20 individuals was sighted in primary sighting. But it should be noted that these dolphins were spotted dolphins, therefore belonging to the genus of *Stenella*. They were not identified in species to know if they are *Stenella frontalis* or *Stenella attenuata*. There was no secondary sighting. These dolphins represent 0.39% of the whole sightings. They thus, come in fifth place (Figure 4).

The position of all the species sighted are reported in the figure 5 below (Figure 5).

Table 2 : Coordinates and distance of the waypoints obtained during the cetacean sighting survey conducted in 2022/23.

Table1. Way points.

Waypoint	Lat d	Lat m		Long d	Long m		Distance (nm)
WP1	12	9	N	17	5	W	175.7
WP2	10	4	N	19	10	W	158.2
WP3	10	47.99	N	16	36.48	W	28.8
WP4	10	37	N	16	9.59	W	144.3
WP5	8	52.85	N	17	50.33	W	212.7
WP6	9	51.7	N	14	24.5	W	1.554823
WP7	9	10	N	14	23.1	W	
							721.3

Tableau 3 Cetacean species sighted during the survey of 2022/23

Nber of species	**Species sighted**		**(Initials)**	**Nbre of Individuals**	**%**	**Nber of schools**
	Common names	**Scientifique names**				
1	Short-finned pilot whale	*Globicephala macrorhynchus*	GM	2505	46,23	6
2	Bottlenose dolphin	*Tursiops truncates*	TT	2017	37,22	3
3	Common dolphin.	*Delphinus delphis*	DD	547	10,06	4
4	Pantropical spotted dolphin	*Stenella attenuate*	SA	330	6,09	2
5	Unidentified dolphins	*D. Indéterminés*	DI	20	0,37	1
	TOTAL			**5419**	**100**	**17**

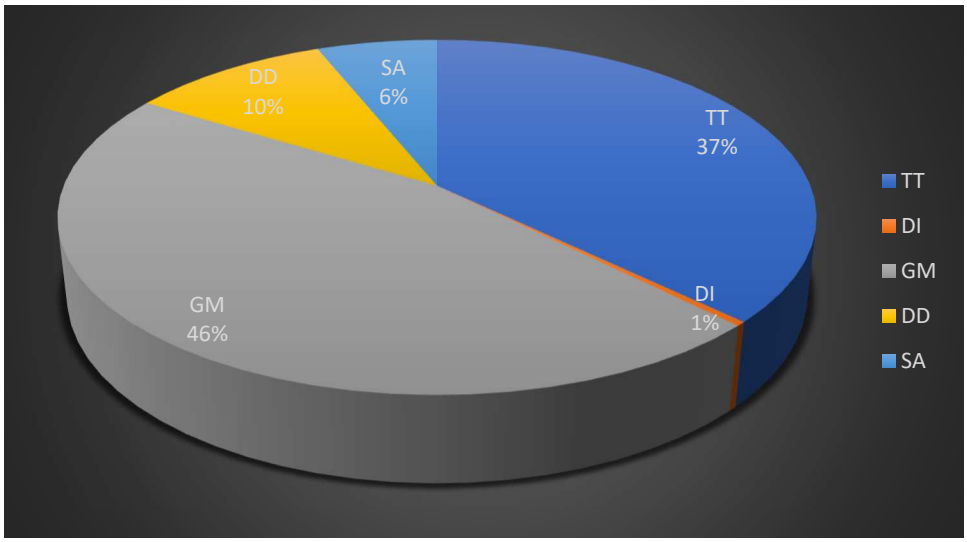
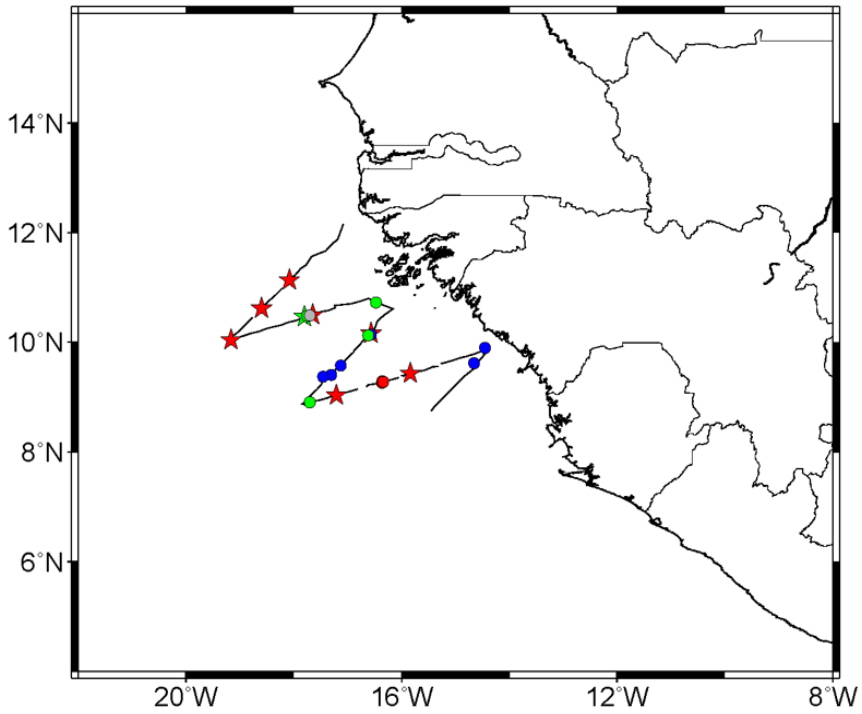


Figure 4 : Percentage of the species sighted during the cetacean sighting survey in 2022/23.



Marks are
Red star: Short-finned pilot whale
Green star: Short-finned pilot whale and common dolphins
Red circle: pantropical spotted dolphins
Green circle: Common dolphin
Blue circle: Bottlenose dolphin
Gray circle: Stenella species.

Figure 5: Positions of species sighted during the cetacean sighting survey 2022/23

CONCLUSION AND RECOMMENDATIONS

During this fourth cetacean sighting survey, with the N/O General Lansana Conte, in the coastal waters of Northwestern Africa, 5419 individuals of all cetacean species were sighted with 17 schools: Short finned pilot whale *Globicephala macrorhynchus,* 2507 individuals sighted for 6 schools with 46.23%, Bottlenose dolphin: *Tursiops truncatus*, 2017 individuals sighted, for 3 schools with 37.22%, Common dolphin: *Delphinus delphis* 547 individuals sighted for 4 schools with 10.09%, Pan tropical spotted dolphin: *Stenella attenuata*, 330 individuals sighted for 2 schools with 6.09%, Undetermined dolphins, 20 individuals sighted for a single (1) school with 0.39%, (see figures 4 and 5 above)

Short finned Pilot whales were the most dominant species sighted. Then comes the bottlenose dolphin in the second position. the third place. Short-beaked common dolphin comes with the third place. The pantropical spotted dolphins took the fourth place. The undetermined dolphins, occupied the fifth place. This survey was not very successful compared to the previous surveys given the fact that the bad weather condition prevailed always during the survey.

Before to produce a more exhaustive scientific document on the distribution, abundance and structure of the species sighted, the following recommendations have been made by the participants in the survey:

- Training of African specialist researchers for the study of cetaceans;

- Continuation of cetacean observation missions and initiation to other scientific studies on cetaceans;

- Implementation of work programs with our potential partner Japan in this case;

- Integration of aspects of biopsies (genetic studies), collection of fecal matter (diet) and sound recordings into the objectives of future campaigns;

- Extension of the campaigns to other Exclusive Economic Zones of the countries bordering the Eastern Atlantic.

THANKS

The participants expressed their deep gratitude to ATLAFCO which kindly funded this campaign in partnership with the Japanese Cooperation.

They also expressed their sincere thanks to the Guinean authorities who invited them to participate in this campaign as well as to the crew of the N/O General Lansana conte of the CNSHB for the smooth running of the mission.

The spokesperson for the African participants in this survey, Dr Wague Abdoulaye from IMROP in Mauritania, on behalf of his colleagues, first thanked the Guinean government and particularly the Director General of CNSHB for having invited them to participate, as always, to these cetacean sighting surveys and the hospitality that they were the object of during their stay in Guinea. He will plead with the Director General of the Center to translate into action the recommendations of the researchers since the first surveys. These recommendations are related essentially to the training of African researchers on cetacean studies, the establishment of work programs with our partner in Japan, the integration of studies on the biology of cetaceans, the extension of surveys to

other countries bordering of the eastern Atlantic. He will insist above all on the maintenance of the research vessel which is a beautiful jewel for Guinea, because it is starting to age a little bit.

The Director General of the Center took the opportunity to remind everyone of the mission of these surveys and the commitment of African countries that are members of the International Whaling Commission (IWC) and in favor of the sustainable exploitation of fisheries resources. He also emphasized Guinea's commitment for the next few years to coordinate these surveys.

In response to all these interventions, the Director General of the Center said he was first of all satisfied with the results obtained during this survey and warmly congratulated and thanked the participants despite the bad weather conditions which characterized this survey. He then made the commitment to faithfully translate the recommendations of the researchers to the Minister of Fisheries and Maritime Economy, who in turn will also translate to her colleagues within the IWC so that Africa will acquire the means and specialists in cetacean studies.

Regarding to the part of the vessel, the Director General said that a team of technicians are already in place for the total and complete repair of the vessel which has already begun.

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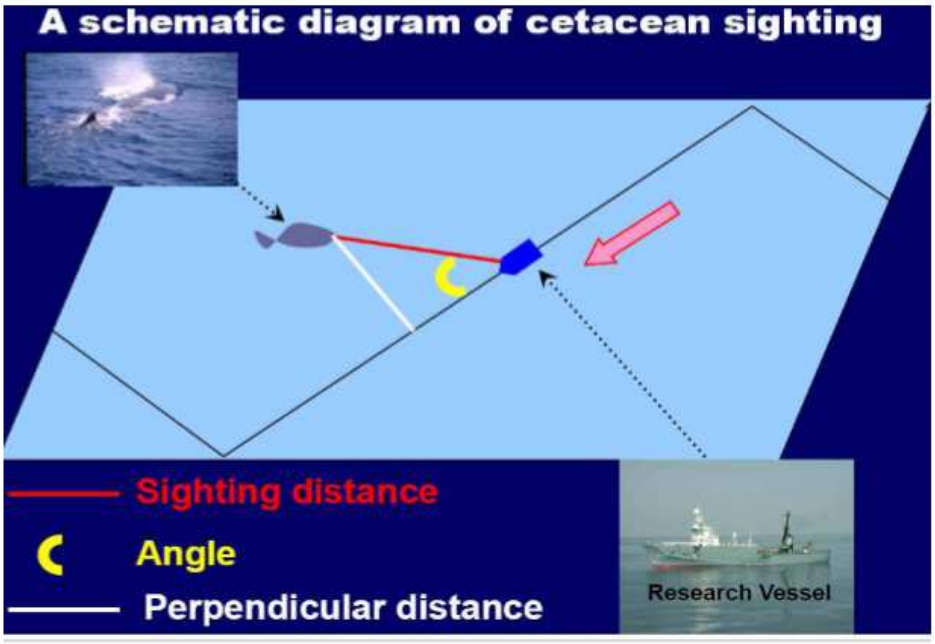
ANNEXES



Schématique diagram of sighting survey

Sighting position above the sighting table

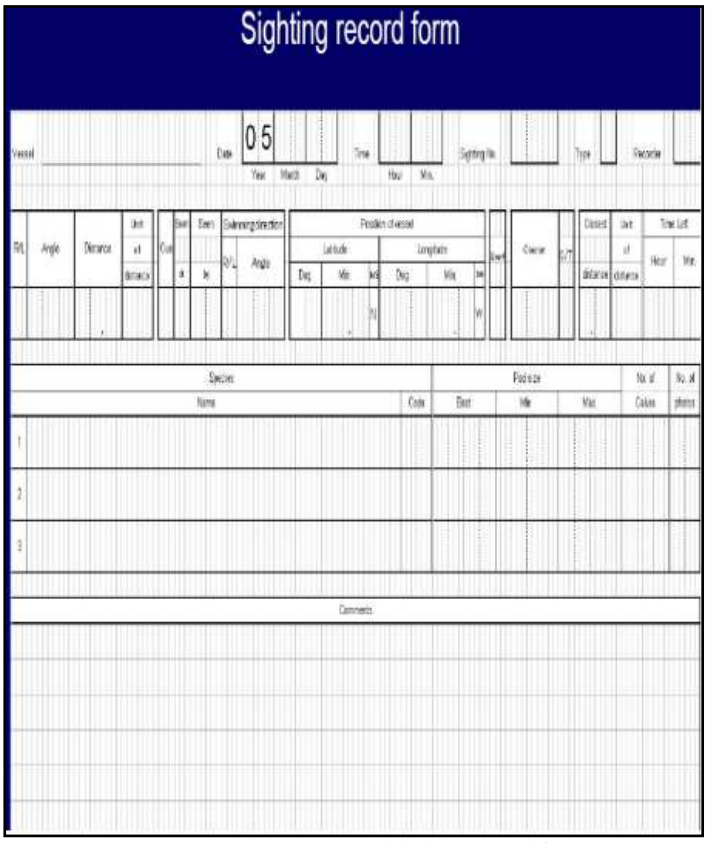
Position the table of sighting

Position of sighting

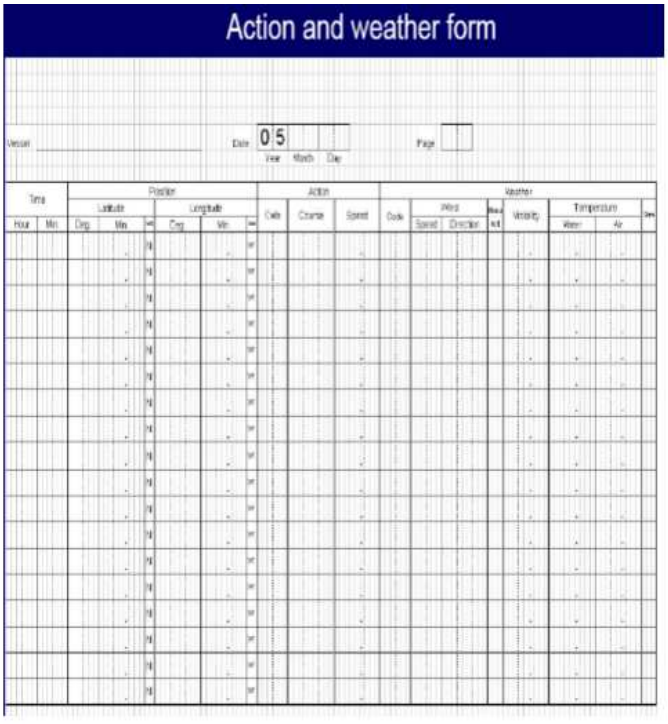
Position of sighting

Position of sighting

Position of sighting



Sighting record form

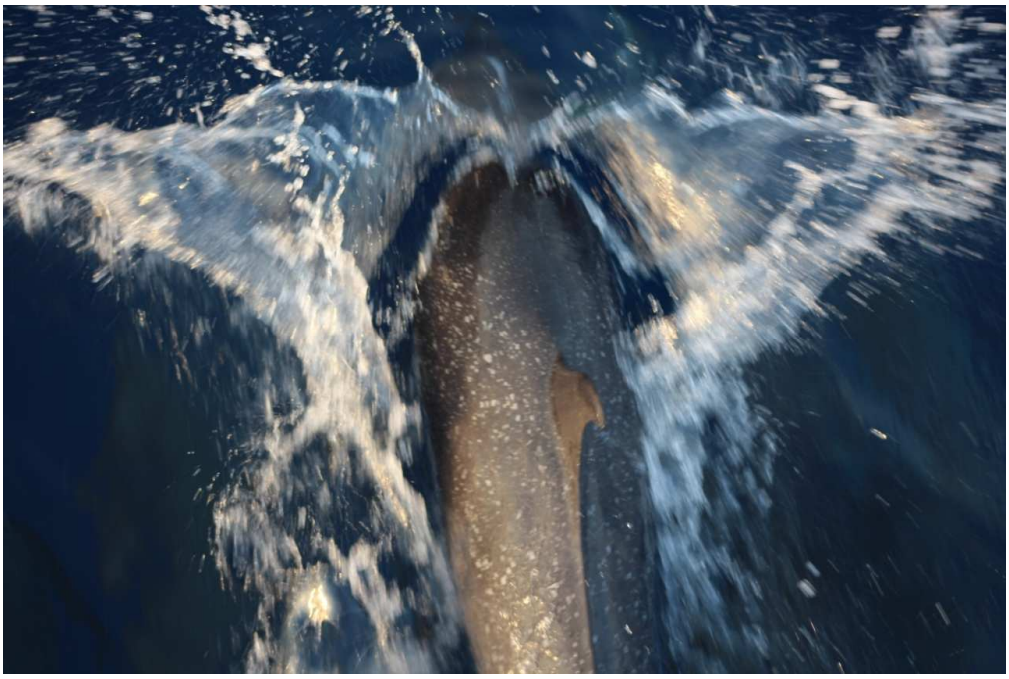


Action and weather form

Some sighting Photos

Bottlenose dolphin: *Tursiops truncatus*

Short finned pilot whale: *Globicephala macrorhynchus*



Pan tropical spotted dolphin: *Stenella attenuata*

Bottlenose dolphin: *Tursiops truncatus*

Bottlenose dolphin *Tursiops truncatus*

Bottlenose dolphin: *Tursiops truncatus*

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