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Research plan for a COMHAFAT cetacean  
sighting survey in coastal waters of  
western North Africa in winter 2018

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INTERNATIONAL  
WHALING COMMISSION

# **Research plan for a COMHAFAT cetacean sighting survey in coastal waters of western North Africa in winter 2018**

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## **ABSTRACT**

A plan is proposed for a cetacean sighting survey conducted by COMHAFAT in coastal waters of western North Africa in winter 2018. The study area is set in the coastal waters Guinea to Liberia, except for shallow waters less than 20 m for safe sailing. Zigzag track lines with around 1,100 nm of length are placed in the area. A 15-days survey period will be set in winter of 2018 season (in January and/or February of 2018). The survey is started off Conakry, Guinea and finished off Palmas Cape of Liberia. The research vessel, GENERAL LANSANA CONTE of Guinea (198 tons), will be engaged. Researchers from COMHAFAT member states conduct the survey. Scientists from nonmember states, however, can be onboard, if the COMHAFAT and vessel capacity allow it. Cetacean searching is conducted from line transect method, under good weather condition (Beaufort wind scale of 3 or less and greater than 2 nm in visibility). Researchers search the sea surface for cetaceans from the vessel following the pre-determined track lines at around 10 knots. The normal closing mode survey is carried out, in which closing is made for all cetacean species encountered on the track lines.

## **INTRODUCTION**

COMHAFAT (Convention Régionale sur la Coopération Halieutique entre les Etats Africains Riverains de l'Océan Atlantique)(in English, ATLAFCO: the Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean) was founded in 1989, as an intergovernmental organization of 22 countries from Morocco to Namibia.

The Constituent Convention of COMHAFAT, which is "the Regional Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean", adopted on July 5, 1991, in Dakar- Senegal, fixed areas and modalities of the Regional Fisheries Cooperation among member states. The Protocol relating to the institutional framework of COMHAFAT was adopted on October 19, 1999, in Conakry – Guinea.

The headquarters of the Organization is based in Rabat – Morocco since October 24, 2009. The Executive Secretariat is responsible for boosting the activities of the Organization in carrying out all administrative, organizational and co-ordination tasks assigned to it by the Conference of Ministers and the Bureau which are the policy and decision-making body and the coordinating and monitoring body respectively.

The main objective of COMHAFAT is an effective and active co-operation between member states for conservation and sustainable development of fisheries in the region.

Therefore, the Conference encourages:

1. The promoting co-operation in management and development of fisheries;
2. The development, co-ordination and harmonization of efforts and capacities of member states to maintain, operate, develop and commercialize the fishery resources;
3. The strengthening of solidarity with African States landlocked and geographically disadvantaged States in the region.

Operations are including:

1. The strengthening of maritime technical and professional training;
2. The development of fisheries research and marine sciences;
3. The promotion of trade and development of fishery products;
4. The implementation of laws regulating responsible fishing.

Regarding to the development of marine scientific research, COMHAFAT encourages member states to exchange their experiences in scientific research and promotes co-ordination between their institutions and the sharing of scientific data on fish stocks. In this respect, COMHAFAT started cetacean sighting surveys in maritime waters of member states, to obtain scientific information on cetaceans.

The Cetaceans are high migrating species. They play a significant role in the balance of the marine ecosystem where they represent the top predators and the most important species within the marine ecosystem. Thus, their information is very important for fisheries resources management.

In the western North Africa, the COMHAFAT zone, the studies on cetaceans are relatively recent. In Guinea the research on the cetacean is conducted by the Centre National des Sciences Halieutiques de Boussoura (CNSHB) that has developed a research program on the survey for the African continent. Thus, cetacean sighting surveys were initiated and carried out by the CNSHB in collaboration with the bordering African countries of the Atlantic since 2002. The CNSHB organized and executed the surveys with the collaboration of some African institutions of fisheries and fisheries research centers such as the Direction General des Pêches in Gabon, the CRO of Abidjan in Côte d'Ivoire, the IMROP of Nouadhibou in Mauritania, the CRODT of Dakar in Senegal, the Direction des Pêches of Cotonou in Benin, the MFRD of Tema in Ghana, the SSRHO IRAD of Limbe in Cameroon and the CIPA of Bissau in Guinea Bissau.

The COMAHAT founded the first cetacean sighting survey in Gabonese waters in 2011 and the second one in the gulf of Guinea covering the EEZ of Côte d'Ivoire, Ghana, Togo and Benin in 2013. The results were reported by Diallo et al. (2013). COMHAFAT will continue cetacean sighting surveys in waters of member states, where scientific information on cetaceans are relatively insufficient. Here, I present a plan of the third cetacean sighting survey by COMHAFAT in the western North Africa.

## **RESEARCH PLAN**

### **Research vessel**

The research vessel, GENERAL LANSANA CONTE of Guinea (198 tons), will be engaged (Fig. 1). The vessel has 29.9m in length and the upper deck elevated 5.4m above the sea surface.

### **Researchers on board**

Researchers from COMHAFAT member states conduct the survey. Samba Tenin Diallo, with the experiences of participating in the past seven cruises conducted in western North Africa, will serve as the cruise leader. Scientists from nonmember states, however, can be onboard, if COMHAFAT and vessel capacity allow it.

### **Schedule**

A 15-days survey period will be set in winter of 2018 season (in January and/or February of 2018). Detailed schedule will be decided under discussion of COMHAFAT, Guinean researchers, and relevant persons. Tentative schedule is noted below.

- |                      |   |
|----------------------|---|
| 1 <sup>st</sup> Day  | Participants embark. The research vessel leaves Conakry of Guinea.                                |
| 2 <sup>nd</sup> Day  | The research vessel arrives at the start point. The survey is commenced.                          |
| 13 <sup>th</sup> Day | The research vessel arrives at the end point of lines set off Liberia.<br>The survey is finished. |
| 15 <sup>th</sup> Day | The research vessel arrives at Conakry. Participants disembark.                                   |
- At Conakry, pre- and post- survey meetings will be held.

## **RESEARCH AREA AND TRACK LINE**

The research area is set in coastal waters of western North Africa from Guinea to Liberia (Fig. 3 and Table 1). Shallow waters less than 20 m are excluded from the area, for safe sailing. The research area will be treated as a single stratum. Cruise track design was undertaken using 'Distance program (ver. 6.2)'. The randomly selected start point set off Guinea will be followed by zigzag track line with around 1,100 nautical miles.

## **SIGHTING ACTIVITY**

The survey is conducted in accordance with the line transect method. The normal closing mode survey is carried out, in which closing is made for all cetacean species encountered on the track lines. 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 surveys (Diallo et al. 2013).

The daily survey is commenced at 08:00, if weather condition is good for cetacean searching: Beaufort wind scale of 3 or less and greater than 2 nm in visibility. The daily survey is ended at 18:00, after 10 hours searching and then the vessel drifts, anchors, or steams to next point. If weather condition is bad, the vessel will drift for wait for good weather, or steam under no searching from tight schedule. Researchers search the sea surface for cetaceans at the upper deck of the vessel following the pre-determined track lines at around 10 knots. Searching activity is carried out with naked eyes. Scaled binoculars (7X) are used for species identification and school size counting. Photographs of cetaceans encountered will be taken for species identification and school size counting.

Angles to the sightings are measured from angle boards set in front of researchers. Furthermore, to calibrate the distance and angle measurement to sightings, distance and angle measurement experiments will be conducted during the survey, where distance and angle to the objects encountered during the survey (e.g., ships and buoys, etc.) is measured on the radar screen and then they are compared with estimates by researchers to evaluate measurement error.

## **DATA ENTRY, MANAGEMENT, AND ANALYSIS**

Sighting and effort-weather data will be recorded on the sighting and effort-weather data form, respectively (Fig. 4). The cruise leader will input data collected to the computer on board during the survey.

All data and samples including photographs collected during the survey belong to the COMHAFAT and will be stored at the CNSHB in Guinea. Survey results will be submitted to the IWC secretariat after agreement of participating countries and the COMHAFAT.

## **REFERENCES**

- Diallo, S. T. and Bamy, I. L. 2013. Report of the cetacean sighting surveys in the COMHAFAT zone: coastal zone of Gabon in September 2011, Gulf of Guinea (Ivory Coast, Ghana, Togo, and Benin) in March-April 2013. Paper SC/65a/IA13 submitted to IWC Scientific Committee. May 2013, (unpublished). 31pp.
- Matsuoka, K., Ensor, P., Hakamada, T., Shimada, H., Nishiwaki, S., Kasamatsu, F. and Kato, H. 2003. Overview of minke whale sightings surveys conducted on IWC/IDCR and SOWER Antarctic cruises from 1978/79 to 2000/01. *Journal of Cetacean Research and Management* 5:173–201.



Figure 1. The research vessel “GENERAL LANSANA CONTE” used for the COMHAFAT cetacean sighting survey conducted in coastal waters of the western North Africa, winter 2018.

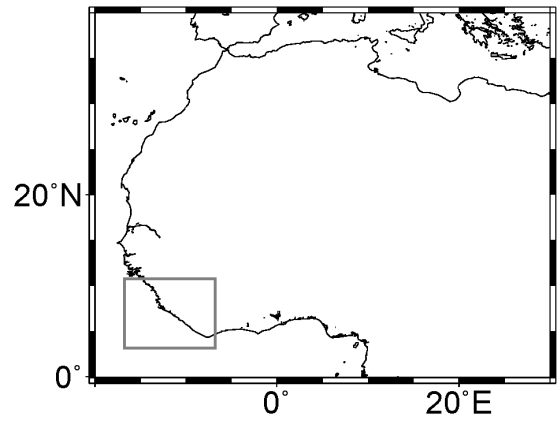


Figure 2. Study area set in coastal waters of western North Africa from Guinea to Liberia, where the COMHAFAT cetacean sighting survey will be conducted in winter 2018.

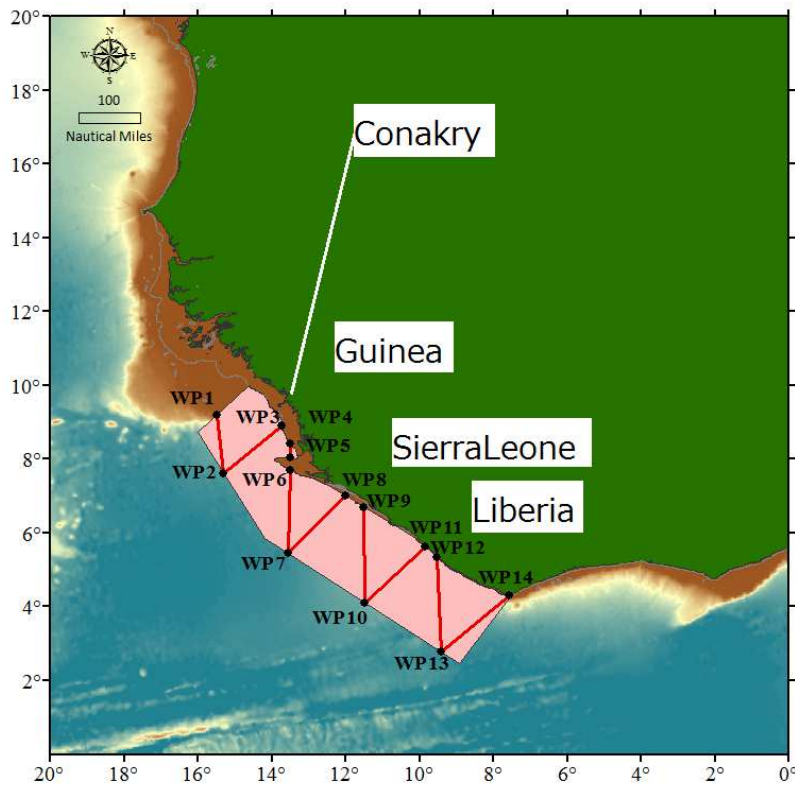


Figure 3. Predetermined track lines with 1,100 nm of length placed in the study area, set for the COMHAFAT cetacean sighting survey conducted in winter 2018. Isobaths of 20m is also shown.

**Sighting Record Form for Cetacean Sighting Survey in coastal waters of the Western North Africa, 2018**

Vessel General Lansana Conte      Date            Time            Sighting No.            Type            Recorder

R/L	Angle	Distance	Unit of distance	Seen at	Seen by	Swimming direction		Position of vessel						Course	Q/T	Closest distance	Unit of distance	Time Left	
						R/L	Angle	Latitude			Longitude							No. of Calves	No. of photos
						Deg.	Min.	NS	Deg.	Min.	EW	Hour	Min.						

Species		Pod size			No. of Calves	No. of photos
Name	Code	Best	Min.	Max.		
1						
2						
3						

Comments

**Action and Weather Record Form for Cetacean Sighting Survey in coastal waters of the Western North Africa, 2018**

Vessel General Lansana Conte      Date            Page

Time		Position						Action			Weather							
Hour	Min.	Latitude			Longitude			Code	Course	Speed	Code	Wind		Beaufort	Visibility	Temperature		Glare
		Deg.	Min.	NS	Deg.	Min.	EW					Speed	Direction			Water	Air	
				N			W											
				N			W											
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Figure 4. Sighting record form and action and weather record form used for the COMHAFAT cetacean sighting survey conducted in winter 2018.

Table 1. Waypoint (WP) set for the COMHAFAT cetacean sighting survey conducted in winter 2018.

WP	Latitude			Longitude		
WP1	9	12.4	N	15	28.5	W
WP2	7	37.2	N	15	18.2	W
WP3	8	55.2	N	13	44	W
WP4	8	24.3	N	13	29.1	W
WP5	8	3.4	N	13	29.5	W
WP6	7	51.6	N	13	29.9	W
WP7	5	26.5	N	13	32.7	W
WP8	7	0.8	N	12	0.3	W
WP9	6	42.2	N	11	29.9	W
WP10	4	6.5	N	11	28.7	W
WP11	5	37.5	N	9	50.9	W
WP12	5	20.7	N	9	31	W
WP13	2	46.5	N	9	24.6	W
WP14	4	17.8	N	7	34.6	W