Marine Fauna in Offshore Waters of Northwest Myanmar

An industry initiative by Oil and Gas operators has provided new insight into the biodiversity of marine fauna (particularly whales, dolphins and turtles) in the offshore waters of Northwest Myanmar

Project Highlights

- Seven O&G operators collated visual marine fauna sightings data collected by marine fauna observers (MFOs) during seismic surveys in the offshore waters of northwest Myanmar in the Bay of Bengal.
- Together with the environmental reports that oil and gas operators have prepared and released to support activities in Myanmar, this initiative consolidates an interesting dataset of accessible environmental information on the offshore marine environment.
- The findings contribute to O&G operator understanding of the existing environment in the region, and can inform future assessments and implementation of appropriate controls and mitigation for offshore activities.

Background

- Data on marine fauna observations were collected by qualified MFOs positioned on seismic vessels during ten marine seismic surveys conducted in the offshore waters of northwest Myanmar between 2015 and 2017.
- The estimated combined seismic survey area was 77,642km^2 (as shown in *Figure 1*), and generally covered deep waters to a maximum depth of 2,800 m.
- Marine seismic surveys were conducted in all months of the year except August and September, with a total marine fauna observation effort of 8,591 hours.
- The collation of MFO sightings data provide an opportunity to contribute qualitative marine megafauna knowledge for a large area of northwest Myanmar offshore waters. It is important to note that the data are not representative of either abundance or distribution of fauna but rather provide details on the presence of megafauna within the areas surveyed.

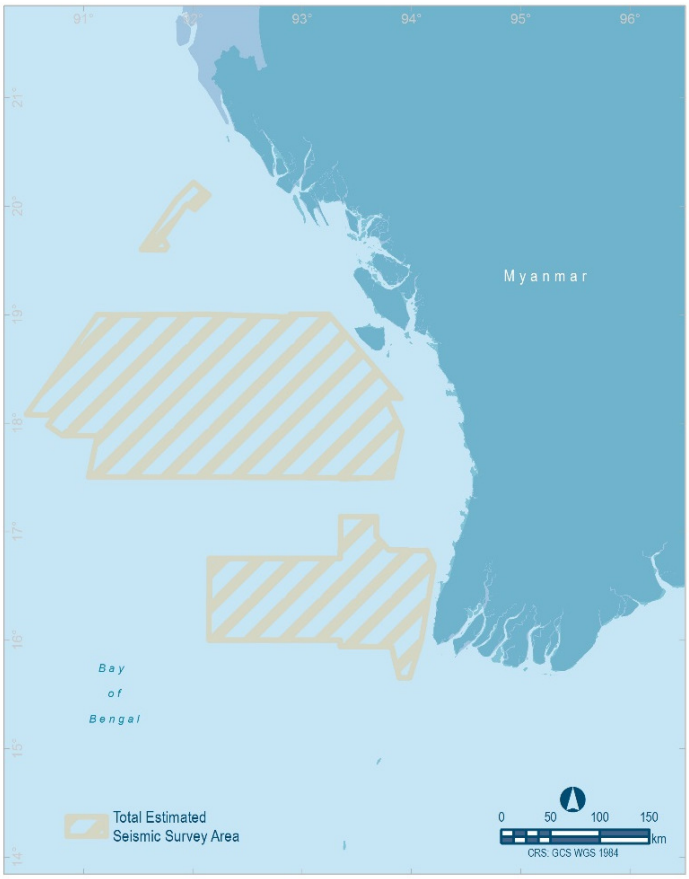

Figure 1: Total estimated seismic survey area for marine fauna sightings

Marine Fauna Observers (MFO)

The role of an MFO is to monitor for the presence of marine fauna during marine seismic surveys and keep a record of observations.

The use of MFOs is one component in managing the interaction of seismic survey activities with the marine environment and represents international best practice for minimizing acoustic disturbance to marine fauna. Observations were conducted following guidelines produced by the UK Joint Nature Conservation Committee (JNCC).

O&G operators recognised the value of data collected by MFOs in contributing to the understanding of marine fauna occurrence in offshore Myanmar waters where little previous information exists.

Key Findings

- Overall, 808 marine fauna sightings were documented. These included 580 marine mammal (whale and dolphin) sightings (totalling 29,421 individuals), and 228 turtle sightings (totalling 267 individuals). Approximately half of marine mammal and turtle sightings were able to be identified to species level. Other wildlife sightings included fish, sea snakes and birds, but were not quantified.
- 15 marine mammal species and five turtle species were recorded over the study period (*Table 1*).
- Seven of the marine fauna species observed are listed as 'threatened' by the International Union for the Conservation of Nature (IUCN): sei whales, sperm whales and all five turtle species.
- The most frequently encountered species were spinner dolphins (168 sightings), Bryde's whales (62 sightings), olive ridley turtles (78 sightings) and Risso's dolphin (28 sightings). Other species were sighted on fewer than 10 occasions.
- The most numerous species was also the spinner dolphin (15,687 individuals sighted).
- Proportions of different marine mammal groups sighted are illustrated in *Figure 2*. 72% of total marine mammal sightings, and 95% of individuals recorded were oceanic dolphins. Group sizes ranged from 1 to 2000 individuals.
- The collated data provide more certainty on the presence and the types of marine fauna present in the offshore environment of northwest Myanmar and this information can be applied by O&G operators as part of future environmental assessments.

New Species Records

This project has contributed three possible new species records for Myanmar waters and eight confirmed records of species previously assumed to occur.

Humpback whales have not previously been reported in the Bay of Bengal. In the current project, two humpback whale sightings comprising 16 individuals were reported.

One record of an Omura's whale sighting and two records of sei whale sightings were reported. Neither of these species have been previously reported in Myanmar waters

Another eight marine mammal species were previously documented as having a 'probable' or 'possible' occurrence in Myanmar, which have now been confirmed by this project (*Table 1*).

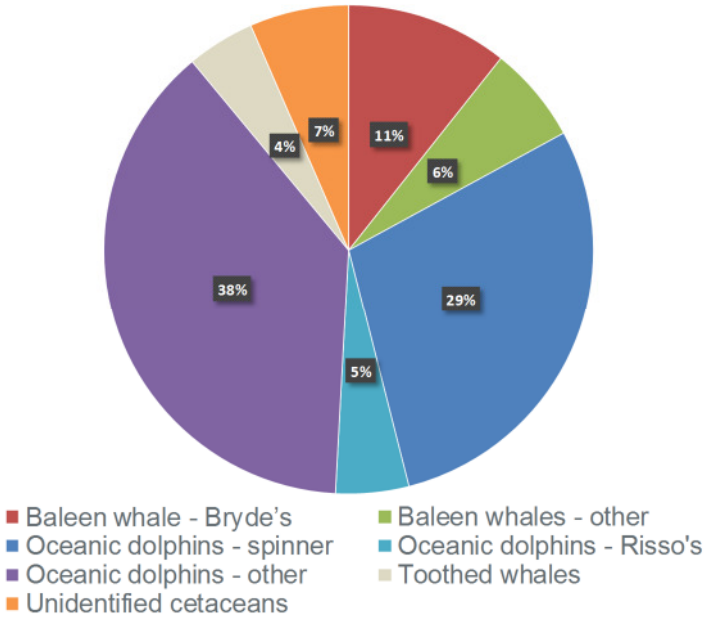

Figure 2: Proportions of marine mammal sightings

Table 1 Marine fauna species observed during marine seismic surveys in the offshore waters of northwest Myanmar 2015-2017 (N=new record; C=confirmation of previously assumed occurrence)

Whales and Dolphins			Marine Turtles
Bryde's whale	Long-beaked common dolphin (C)	Sei whale (N)	Green turtle
Common bottlenose dolphin (C)	Melon-headed whale (C)	Short-finned pilot whale (C)	Hawksbill turtle
False killer whale (C)	Omura's whale (N)	Sperm whale (C)	Leatherback turtle
Humpback whale (N)	Pantropical spotted dolphin	Spinner dolphin	Loggerhead turtle
Indo-Pacific bottlenose dolphin	Risso's dolphin (C)	Striped dolphin (C)	Olive ridley turtle