

SHORT COMMUNICATION

Mass Beach Stranding of Blue Button Jellyfishes, *Porpita porpita* (Linnaeus 1758) from the Coast of Mandvi, Kutch, India during August, 2021

Niki Shah Yashesh Shah*

Opus Oceanic Research Laboratory, Jyoteshwer Park, Mandvi, Kutch, 370465, India

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ABSTRACT

Present short communication reports about beach stranding of *Porpita porpita* (Linnaeus 1758) from the Coast of Mandvi, Kutch during August 2021. Also, this is the first record of the blue button jellyfishes for the northern Gulf of Kutch region. A study was carried out by primary observation and measurements of common environmental parameters such as Sea Surface Temperature (SST), Wind Direction & Wind Speed. Aboral and oral parts were observed and described. It is assumed that the large biomass of blue button jellyfish on the beach is due to strong shoreward Monsoon winds.

1. Introduction

Porpita porpita, commonly known as blue button jellies are under class hydrozoan. These attractive blue buttons are native to tropical and sub-tropical waters of the Pacific, Atlantic, and Indian Ocean ^[1] and are mainly observed on the surface of the seawater ^[2]. Mass beach stranding event of blue button jellyfish in India was

recorded on the Odisha coast during summer 2019 ^[3]. Apte et al. (2012) recorded the occurrence of the species from the Maharashtra coast ^[4]. In Gujarat, *P. Porpita* was documented from Marine National Park of the southern coast of Gulf of Kutch by ^[5-7]. However, the stranding of a large number of *P. Porpita* was reported on the Veraval coast during the monsoon season of 2010 by CMFRI ^[8], after that, it was also observed on Dwarka

***Corresponding Author:**

Yashesh Shah,

Opus Oceanic Research Laboratory, Jyoteshwer Park, Mandvi, Kutch, 370465, India;

Orcid ID: <https://orcid.org/0000-0002-2643-497X>;

Email: yasheshshah99@gmail.com

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coast by ^[2]. A similar kind of mass stranding event of *P. Porpita* was observed in this study from the well-known windfarm beach of Mandvi town Situated on the northern coast of the Gulf of Kutch region as well as it is the first documentation of *P. Porpita* from this region. The evaluation of this stranding was carried out to provide scientific records.

2. Materials and Methods

The immediate field survey was carried out after being informed by locals. Primary observations of stranded *P. porpita* such as measurement of disc diameter and morphological structures were studied and photographs were taken for documentation. Specimens were studied and photographed on the field and left to the same location. Visual identification was carried out. The total area of the approximate stranding was measured using the Standard GPS Mobile application. Common parameters such as Sea Surface Temperature (SST), Wind Direction & Wind Speed were obtained from www.windy.com using the ECMWF forecast model.

Morphological observation

The maximum diameter of the central disc of the *P. porpita* was recorded at 42 mm from random measurements (Figure 2). This unique kind of Cnidarian was observed structurally in two parts: i. Aboral Part: hard, flat to slightly convex, golden brown, the gas-filled floating disc in the centre, a large number of chitinous air pores illustrating specific pattern on the dorsal side known as pneumatophores (Figure 2A) and ventrally, large numbers of gonozooids were observed with numerous medusae buds on it. Single large gastrozooids obscured by a surrounding colony of gonozooids (Figure 2B). ii. Oral Part: Bright blue tentacles like mouthless polyps, often called dactylozooids having stinging cells called nematocysts (Figure 2).

3. Results and Discussion

Mass beach stranding of the jellyfish *Porpita porpita* (Linnaeus 1758) was observed in Windfarm beach of Mandvi, Kutch (22°49'23.34"N, 69°20'28.57"E) (Figure 1) during the first week of August 2021. The stranding was observed during low tide on the entire intertidal zone of an estimated 4 km of the beachline (Figure 2D). Identification was carried out by external morphological features. Windfarm beach is a very popular tourist destination and is a routinely visited place by locals. The tidal amplitude at this location ranges from 0.5 m to 4.5 m which results in a wide stretch of the intertidal zone. SST

at the location was recorded from 25 °C to 27 °C. Wind speed was observed at 40 km/h and wind direction was south-westerly and shoreward.

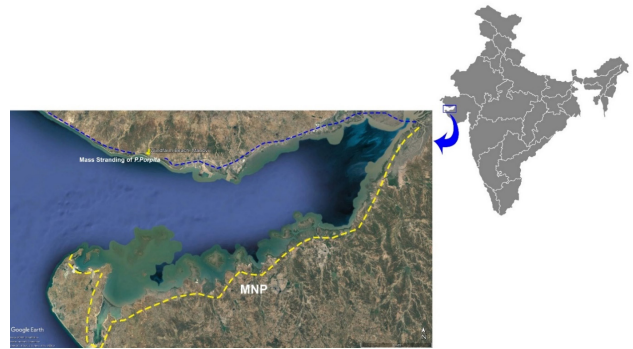


Figure 1. Map showing location of mass stranding site of *P. porpita*. (MNP: Marine National Park)

Furthermore, many of the central discs of *P. porpita* were observed eaten, it can be assumed from the marks that they may be eaten by fish (Figure 2C). It is also observed that while picking the specimen dactylozooids remains attached to the sand may be due to sun drying. Blue pigment was also observed released by the specimens around them. Several specimens of *Physalia* were also observed along with the *P. porpita* biomass.

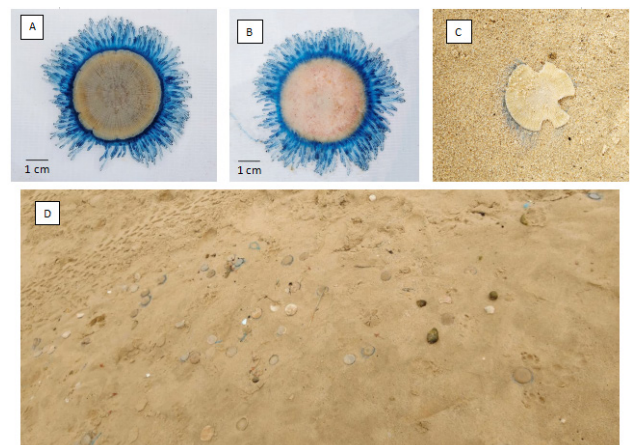


Figure 2. *Porpita porpita* (A) Dorsal view (B) Ventral view (C) Predation by fish (D) Mass Stranding of *Porpita* on the beach.

From the above observations, it can be assumed that large biomass of *P. porpita* can be carried out in the northern coastal region of the Gulf of Kutch by strong south-westerly monsoon winds from the Southern coast of the Gulf of Kutch. However, the study of hydrozoan species in this area is very insufficient due to a lack of knowledge and general interest in marine biodiversity. In addition, the occurrence of large biomass may be due to higher water temperature and salinity or shifting of

planktonic biomass by global warming^[9-11]. Therefore, further study requires to identify the involvement of ecological parameters. In spite of that this study reported for the first time the occurrence of *P. porpita* and its mass beach stranding on the northern coast of the Gulf of Kutch region. The expanded distribution of *P. porpita* indicates many ecological attributes and hope for the survival of the species population in this area.

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