AN OBSERVATION OF IRRAWADDY DOLPHIN *Orcaella brevirosstris* (Gray,1866) IN CHILIKA LAGOON, ODISHA

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Abstract: Chilika Lagoon is the natural adobe of Irrawaddy Dolphins (*Orcaella brevirostris*). Wildlife wing of Forest Department and Chilika Development Authority has initiated several conservation measures for the protection and conservation of Irrawaddy Dolphins. The annual population estimation of Irrawaddy Dolphins in Chilika Lagoon was counted on 17th January 2019. The annual population estimation survey of Irrawaddy Dolphins in Chilika Lagoon was conducted following Line Transect technique. The study resulted 9 Irrawaddy Dolphins counted in Central Sector 2. The total numbers of Irrawaddy Dolphins in Chilika Lagoon were 113.

Key Words: Chilika Lagoon, Irrawaddy dolphin, CS-2, Population, Estimation

I. INTRODUCTION

Endangered species conservation required many lines of inquiry to provide the evidence required for a holistic approach to conservation planning (Sutaria et al., 2007). The study is about the observations of endangered Irrawaddy dolphin, *Orcaella brevirostris* in Chilika Lagoon, India, as a case study of population density in Central Sector- 2 (CS-02). The species is found in isolated, uneven populations and tends to occupy shallow, muddy coastal waters, encircled bays and lagoons, or fresh watercourse systems. In the region of the Indian subcontinent, the species has been recorded from Chilika Lagoon on the east coast of India, and in the tributaries of the Sunderbans Delta, West Bengal. The study informs current knowledge regarding Irrawaddy dolphins and produces new results for the population in Chilika Lagoon.

The dominance of top down intervention by central governance structures to prevent the loss of biodiversity and habitats, and the extinction of species before they were even scientifically described, led to the large scale movement of 'preservationist conservation' in the 1970s. 'Protected Areas' that excluded all or lethal human activities (IUCN, 1994) were typically the first course of action (Redford & Sanderson, 2000) (Salafsky & Wollenberg, 2000). This approach is the irrevocable product of the preservationist paradigm, and typically involves the relocation of human communities from terrestrial protected areas (Karanth & Madhusudan, 1997; McLean et al., 2003; Rangarajan & Shahabuddin, 2006), whereas marine protected areas typically ban the harvest of certain threatened species or exclude certain kinds of fishing and developmental activities (Agardy, 1994; Carr, 2000). By the 1970s, the protected area approach was increasingly challenged by human communities that had traditional cultural ties to or obtained economic benefits from the natural resources being managed (Rao & Geisler, 1990; Smith & Marsh, 1990; Agrawal & Redford, 2006).

II. THE COAST OF ODISHA AND CHILIKA LAGOON, INDIA

The state of Odisha is on the north-eastern coast of India and is the western aspect of the northern Bay of Bengal. Chilika Lagoon is in the south of Odisha. The Bay of Bengal has lower and less stable surface salinity, and a lower biological productivity than the Arabian Sea on the western coast of India (Kumar et al., 2006). The influx of huge volumes of fresh water (1.5x1012 m3 p.a.) and sediment (2000 million tons p.a.) from the Ganges-Brahmaputra deltaic basins and rivers into the Bay of Bengal (Rajawat et al., 2002) makes this Bay a depositional sink. The western aspect of the Bay of Bengal (or the east coast of India), is characterized by a narrow continental shelf followed by a steep slope (Pernetta, 1993; Sarma et al., 2000; Kumar et al., 2006). Suspended sediment plumes formed by the deltaic river systems spread into the Bay in the north-south direction between 21°N and 17°N while ocean currents, sand movement and drift occur in the south-north direction (Rajawat et al., 2002; Madhupratap et al., 2003).

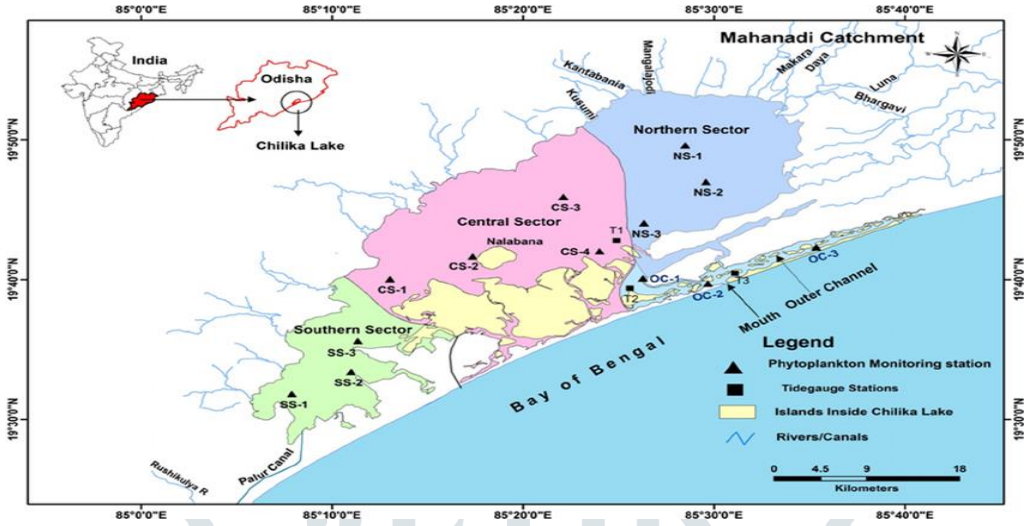
III. MATERIALS AND METHODS

The study was observed by direct sighting method. To count the population of Irrawaddy Dolphin in Chilika Lagoon, ten teams were made. The team contain three or four experienced persons. Each team was equipped with

binoculars, GPS and data recording sheets etc. They started their survey at a parallel distance from each other from the start point at 06:50 AM.

IV. STUDY AREA

Figure- 1 The study area is Chilika Lagoon, Odisha, India Central Sector 2



V. RESULTS

On the dated 17th January 2019, the dolphin census organised by Chilika Wildlife Division and Chilika Development Authority in Chilika. The study resulted 9 Irrawaddy dolphins counted in Central Sector 2 at 07:50 AM which is 7.96% of the total dolphin population present in Chilika Lagoon. The GPS location was N19.71012, E085.23412 straight (East) from Catamaraine boat.

Figure- 2 Our Dolphin survey team members

Figure-3 Showing Sighted dolphins in Central Sector 2 in Chilika Lagoon

Figure- 4 Showing the population trend of Irrawaddy Dolphin from the year 2003 to 2019

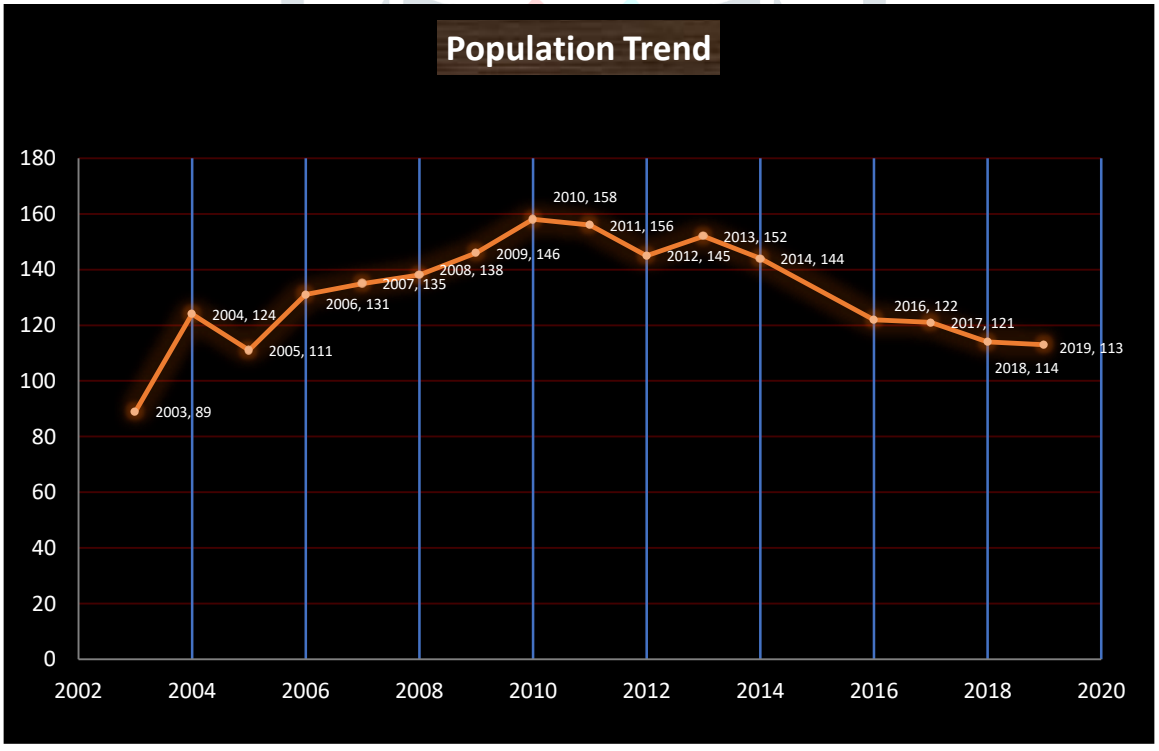
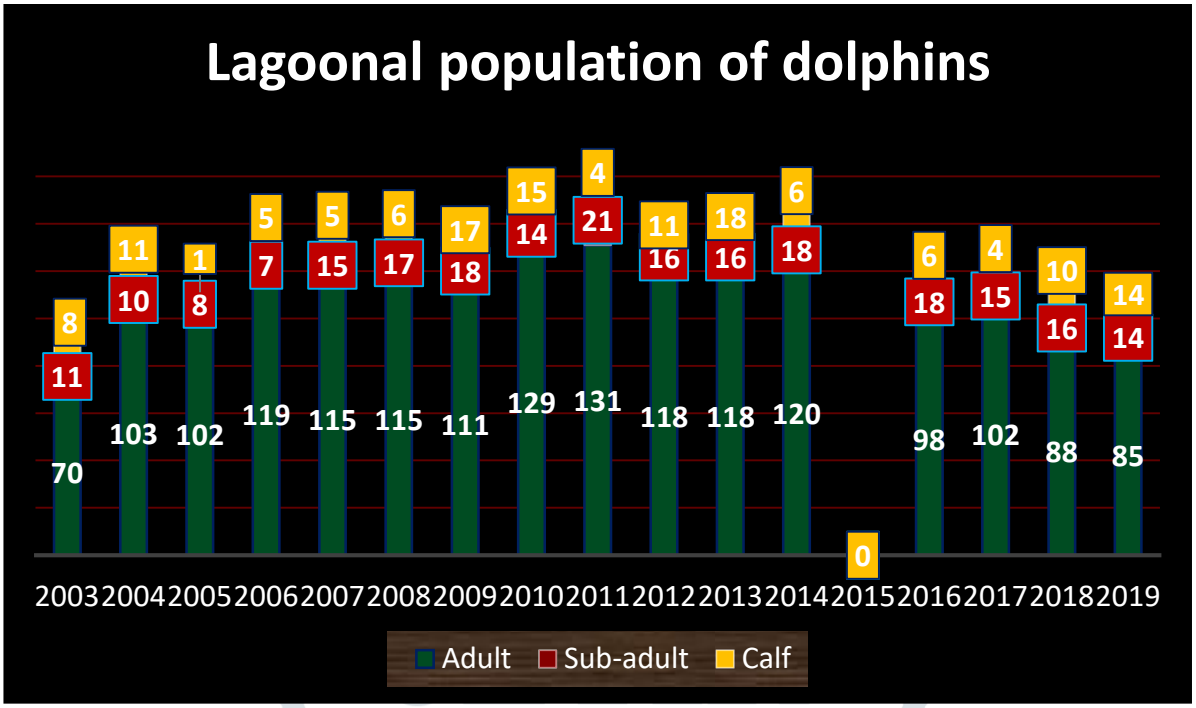


Figure- 5 Showing different categories of dolphin in Chilika



VI. DISCUSSION

The population of Irrawaddy Dolphin was recorded since 2003. The minimum population of Irrawaddy Dolphin was recorded in 2003 and maximum was in 2010. In 2015 the Dolphin Census in Chilika was abandon due to bad weather. The population of Irrawaddy Dolphin gradually decreased from 2010 to 2019.

VII. CONCLUSION

Dolphin monitoring in Chilika lagoon need more attention to identify the problem and reduce the anthropogenic pressure in the lagoon. The awareness programme for dolphin conservation will be more required to save the endangered dolphin.

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