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THE POD

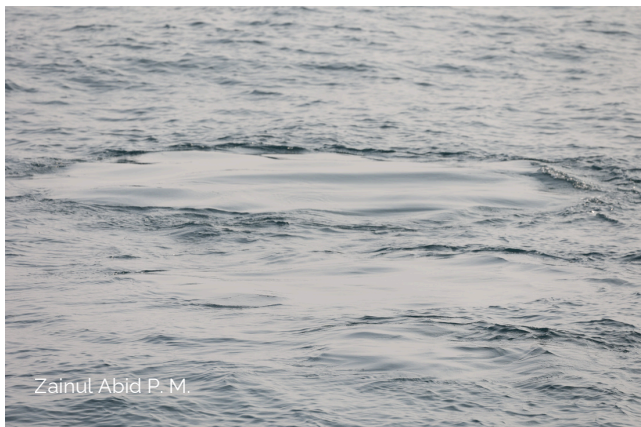
BULLETIN OF THE MARINE MAMMAL CONSORTIUM OF INDIA

PHOTOSTORY

Learning to Read the Sea: Recognising Whale and Dolphin Footprints in Indian Waters

Zainul Abid P. M. , Alvin Anto and Ratheesh Kumar R.

I'll never forget the first time I encountered a Bryde's whale (*Balaenoptera edeni*) in the wild. We were surveying off the coast of Karnataka when something unusual caught my eye, a smooth, oval-shaped patch spreading gently across the water's surface. At first, I wasn't sure what I was seeing. But then it clicked. A whale had just passed beneath, and the patch was the trail it left behind. That patch, known among researchers as a 'footprint', was created by the powerful motion of the whale's tail underwater.



Surface footprint of *Balaenoptera edeni* observed in the territorial waters of Karnataka.

It wasn't dramatic or splashy, but it was incredibly telling. That single, quiet disturbance in the sea alerted us to exactly where the whale would surface next. We had read about such footprints before, but this was the first time we truly understood how useful they could be in the field. They helped us stay one step ahead while tracking cetaceans and shaped our entire approach to observation.



Balaenoptera edeni resurfacing after the thin water layer 'whalefootprint'

Marine mammal surveys are rarely simple. The ocean is a tough place to work, with rolling waves, harsh reflections, changing light, and the constant movement of the boat. Most marine mammals surface unpredictably and only for a few seconds, often far from the vessel. At those distances, using high zoom lenses becomes necessary. But high zoom settings also reduce the field of view, making it much easier to miss key moments. Capturing useful photos that show dorsal fins, flukes or other important features becomes a real challenge.

This is where footprints come in. These calm, oval-shaped patches are left behind when a whale or dolphin dives, disrupting and flattening the sea surface. The usual tiny ripples, or capillary waves, are dampened, leaving a visible signal that something just passed through. Rousseaux et al. (2013)¹ have described this phenomenon in more detail. Interestingly, in Kerala, local fishers have known about these signs for generations. They call them “Klāvu” (ക്ലാവ്), showing how traditional knowledge has long recognised the value of these surface patterns.



Flukeprint or surface footprint of *Sousa plumbea* observed in the territorial waters of Kerala.

We encountered another striking example during a survey off the Kerala coast, this time involving Indian Ocean humpback dolphins (*Sousa plumbea*). In clearer light and calm seas, we observed their surface prints more easily. Unlike the Bryde's whale, the dolphins left smaller, more delicate patches. These prints varied in size and shape, and we suspect the variation might be linked to individual differences like age, sex or swimming style. By this point, we had learned to look for these subtle signs, and they helped us locate the animals before they broke the surface.

With time and experience, recognising these prints has become an essential skill. They guide our cameras and binoculars to the right place, improve our timing, and make our documentation more reliable. In difficult conditions, these cues can make the difference between a successful sighting and a missed opportunity.

A whale or dolphin footprint may seem like just a fleeting patch of calm water, but once you know what it means, it becomes one of the most valuable tools in a marine mammal scientist's fieldwork.



Zainul Abid P. M.

The resurfacing of *Sousa plumbea* follows the appearance of a 'footprint' or 'flukeprint' on the thin water layer