

Bhadra to be more circumspect when making serious allegations of misrepresentation of data. We also urge her to refrain from hastiness in drawing generalized conclusions from preliminary studies, especially since 'similar night-time samplings of behaviour' are ongoing, and may paint a more complete picture of dog behaviour and potential interactions with humans. As Bhadra herself says 'understanding the behaviour and ecological dynamics of the free-ranging dogs can only be achieved through an extensive and rigorous scientific exercise'. We agree, but maintain that the study of Majumder *et al.*³ is neither extensive nor rigorous.

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Seasonal variation and climate change influence coral bleaching in Pirotan Island, Gulf of Kachchh Marine National Park, Gujarat

The Gulf of Kachchh occupies an area of 7300 sq. km with 42 islands with various groups of flora and fauna¹. Pirotan Island is a part of the Gulf of Kachchh Marine National Park, located at 22°35'03.0"N, 069°57'26.2"E with rich coral reef ecosystem. A rapid survey during low tide on 14 September 2014 to assess the intertidal diversity of the Island showed

bleached coral colonies, including new recruitments in the intertidal zone. The bleached coral colonies include *Favia favus*, *Favia lacuna*, *Favia speciosa*, *Favites halicora*, *Favites flexuosa*, *Porites compressa* and *Porites lichen* (Figure 1). Coral bleaching is a phenomenon that takes place when the symbiotic relationship between zooxanthellae

and host corals breaks down under certain environmental stresses². Global warming caused by greenhouse gases has increased both sea-surface temperature (SST) and UV-B radiation³. According to Marimuthu *et al.*³, coral bleaching in Andaman waters was due to temperature fluctuation from 30°C to 34°C. The SST data⁴ of the National Environmental

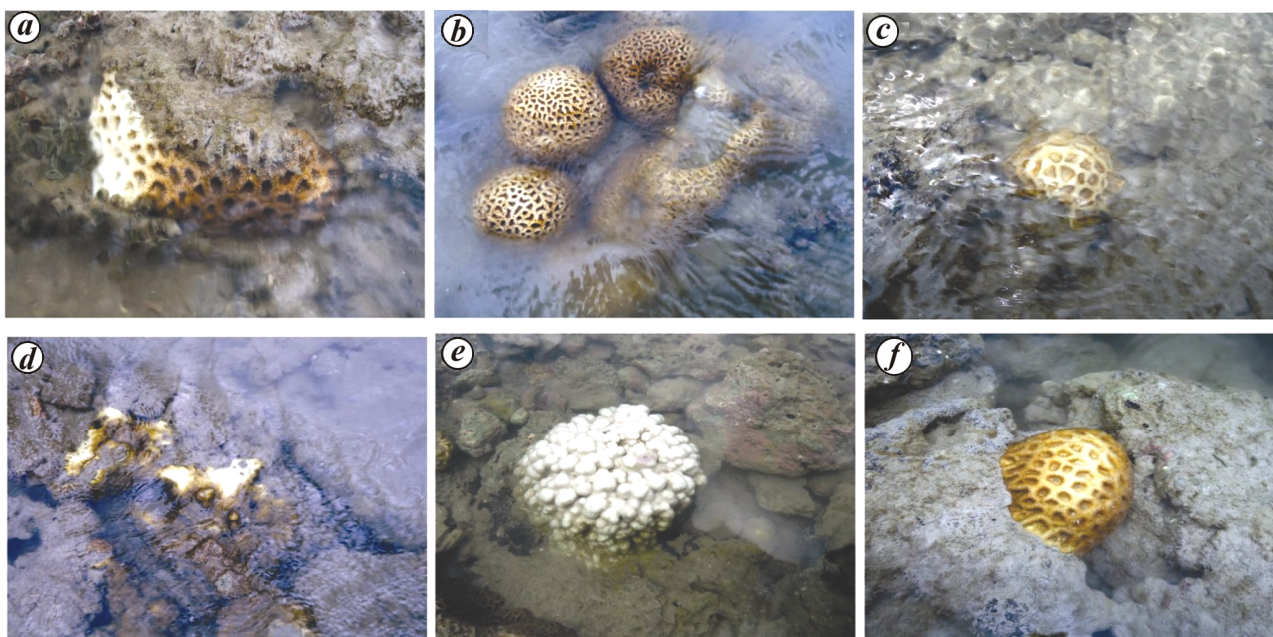


Figure 1. Bleached corals recorded at Pirotan Island. **a**, *Favia lacuna*; **b**, *Favia favus*; **c**, *Favites halicora*; **d**, *Porites lichen*; **e**, *Porites compressa*; **f**, *Favites flexuosa*.

Satellite Data and Information Service (NESDIS) showed 1–2°C increase above normal in the Gulf of Kachchh during the past six months. The increase of SST and sedimentation may be a reason for coral bleaching in Pirotan Island. The high SST in the Island might be due to delay in the onset of the southwest monsoon, resulting in prolonged summer period. The coral bleaching hotspot provides an instantaneous measure of the thermal stress inducing coral bleaching and there is evidence that corals are sensitive to the accumulation of thermal stress over time². This event indicates that if there is no increase in thermal tolerance in the coral reefs, the catastrophic bleaching would become an annual or biannual

event for almost all reefs in the Indian coastal region in the next 30–50 years⁴. The marine biology community will be most seriously affected by these fluctuations in near shore, which indirectly influence the catastrophic changes.

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