Rising Indian Ocean

How is global warming affecting oceans?

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- There are two broad mechanisms at work.\n\n
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  - Heat trapped in the atmosphere due to rising sea levels makes water expand.
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  - Melting ice sheets begin to add water to the world’s oceans.
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- NASA’s satellite data shows that the seas on average have risen 85 mm since 1993, adding about 3.5 mm annually.
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What is peculiar about the Indian Ocean?

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- The Indian Ocean has been rising rapidly, particularly since 200.
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- It was **specific to a smaller stretch called the North Indian Ocean,** which consists of the Bay of Bengal, the Arabian Sea and a large part of the Indian Ocean until the 5 degree S latitude.
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- North Indian Ocean sea levels actually dipped between 1993 and 2004, at about 0.3 mm per year, but after 2004, the rise was 6 mm annually.
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- Such a fluctuating trend hasn’t been observed for the Pacific Ocean and the Atlantic Ocean.
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Why did this happen?

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- The **North Indian Ocean is surrounded by land on all sides,** except an outlet on the southern side.
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- This influences the rate at which heat is absorbed and flushed out from within the system.
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- **Wind flows,** which led to warm water welling up on the Indian Ocean surface, changed directions every decade and probably influenced sea level patterns.
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What does this imply?

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- This means a rise in average global temperature doesn’t mean a concurrent rise in sea levels everywhere.
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- Every year in the last decade has broken temperature records that have held for over a century.
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- But researchers believe that **North Indian Ocean levels may see a fall over the next decade** (like seen between 1993 and 2004).
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What should be done?

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- These points to a need for more research to understand the inherent variability of the Indian Ocean.
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- This could help sharpen monsoon forecasts and predicting coastal erosion patterns.
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- Better understanding of sea level undulations could also inform future reports by the Intergovernmental Panel on Climate Change.
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Source: The Hindu

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