

February 07th, 2019 Sample Current Affairs

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1. Magnetic north pole is drifting fast from the Canadian Arctic and towards Russia

- What is this phenomenon about?**
- What is Magnetic North Pole? How is it different from Geographic North Pole?**
- What's the issue now?**
- Why it is moving faster?**
- What are the consequences of drifting magnetic north pole?**

GS paper 1 (Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone)

In this video, you can find detailed answers for all the above questions.

The above article has been retrieved from:

Sowmiya

Ashok, Amitabh Sinha . (2019, February , 7). Explained: Magnetic north pole drifting fast towards Russia.. Indian Express. Retrieved from

<https://indianexpress.com/article/explained/magnetic-north-pole-climate-change-canadian-arctic-russia-5570911/>

What is the context about?

Since Monday, news publications across the world have been reporting that the magnetic north pole is drifting fast from the Canadian Arctic and towards Russia.

What is this phenomenon about?

- The Earth behaves like a giant bar magnet — well, almost — and this behaviour defines its magnetic north and south poles, which are not static. A compass points towards magnetic north.
- The Earth's magnetic behaviour is far more complex than that of a simple bar magnet. Its north poles and south poles move around sometimes erratically. Over large periods of time, they change their locations significantly, sometimes even interchanging their positions.

What is Magnetic North Pole? How is it different from Geographic North Pole?

The Earth has two north poles- magnetic and geographic.

Geographic north pole- It is northern axis around which the earth rotates and is fixed. The North Pole is located in the middle of the Arctic Ocean.

- The Magnetic North Pole (also known as the North Dip Pole) is a point on Ellesmere Island in Northern Canada where the northern lines of attraction enter the Earth.
- A compass needle will point to the Magnetic North Pole – which is different from the geographic north.

What's the issue now?

- Currently, the magnetic north pole is located somewhere over northern Canada, a fact discovered in 1831 by Sir

James Clark Ross. Since then the magnetic north pole has been moving across the Canadian Arctic towards Russia, and has moved hundreds of miles over the last several decades. This phenomenon is known as the Polar Shift Theory.

- ❑ Scientists have now realised the pace of this movement has suddenly increased, quite significantly, from about 14-15 km per year till the 1990s to about 55 km per year in the last few years. This has led to scientists updating the World Magnetic Model (WMM) that tracks this movement. It was a year ahead of schedule.

Why it is moving faster?

- ❑ Scientists do not have full clarity on. The movement of liquid iron and other metals in the outer core of the Earth is known to influence the magnetic field, but this movement is chaotic and turbulent. Scientists do not fully understand how the movement happens or why.
- ❑ The study of the phenomena happening inside the earth can only be done indirectly or through computer modelling, because of the extremely hot temperatures prevailing there. Scientists hope that this acceleration in the shifting of magnetic north pole would throw some new insights into the phenomena happening deep inside the Earth's surface.

What are the consequences of drifting magnetic north pole?

The consequences:

- ❑ The entire transportation sector, especially aviation and shipping, depends on correctly knowing the position of magnetic north to chart out their navigation paths. Similarly, it is crucial for militaries, who need to know this for firing their missiles or for other purposes. Knowing the magnetic north is vital for a number of civilian applications as well.
- ❑ The compasses that are used in modern instrumentation are much more sophisticated, digital and more accurate. This is the reason why they need to be recalibrated to reflect the change in the magnetic north pole. This is what the unscheduled release of the WMM has done.