

# FAQs

## International Argo Program

### Q. Why is this in news?

A . The International Argo Program system to observe carbon concentration in the world's oceans is extremely inadequate to meet the growing and urgent need for information on oceanic carbon, says a report.

### Q . What is Argo?

A.

- Argo is an international program that uses profiling floats to observe temperature, salinity, currents, and, recently, bio-optical properties in the Earth's oceans; it has been operational since the early 2000s.
- The real-time data it provides is used in climate and oceanographic research.
- A special research interest is to quantify the ocean heat content (OHC).
- Each instrument (float) spends almost all its life below the surface.
- The name Argo was chosen because the array of floats works in partnership with the Jason earth observing satellites that measure the shape of the ocean surface.
- In Greek mythology Jason sailed on his ship the Argo in search of the Golden Fleece.

### Q. What are its aims?

A.

- The data that Argo collects describes the temperature and salinity of the water and some of the floats measure other properties that describe the biology/chemistry of the ocean.
- The main reason for collecting these data is to help us understand the oceans' role in earth's climate.
- For example, the changes in sea level (once the tides are averaged out) depend partly on the melting of icecaps and partly on the amount of heat stored in the oceans.
- Argo's temperature measurements allow us to calculate how much heat is stored and to monitor from year to year how the distribution of heat changes with depth and from area to area.

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- As ocean heat content increases, sea level rises, just like the mercury in a thermometer.

## **Q. How does it work?**

### **A.**

- Each Argo float (costing between \$20,000 and \$150,000 depending on the individual float's technical specification) is launched from a ship.
- The float's weight is carefully adjusted so that, as it sinks, it eventually stabilizes at a pre-set level, usually 1 km.
- Ten days later, an internal battery-driven pump transfers oil between a reservoir inside the float and an external bladder.
- This makes the float first descend to 2km and then return to the surface measuring ocean properties as it rises.
- The data and the float position are relayed to satellites and then on to receiving stations on shore.
- The float then sinks again to repeat the 10 day cycle until its batteries are exhausted.