



First Global Water Survey Satellite

Why in News?

Recently, a [National Aeronautics and Space Administration \(NASA\)](#) -led international satellite, **Surface Water and Ocean Topography (SWOT)** was launched from Southern California by SpaceX [Falcon 9 rocket](#).

- The satellite will take the **first global survey of Earth's freshwater systems** from space.

What is Surface Water and Ocean Topography?

▪ About:

- SWOT is an **advanced radar satellite that aims to provide scientists with a deeper understanding of the oceans and how climate change impacts them.**
- The rocket's payload, the SWOT, incorporates **advanced microwave radar technology** to collect high-definition measurements of oceans, lakes, reservoirs and rivers over 90% of the globe.

▪ Significance:

- Using its radar, the **satellite will be able to measure the water levels of ocean features ten times more accurately** than is currently possible.
- It will **also be able to measure over a million lakes and rivers on Earth.**
- Through its observations, the **satellite will also be able to improve the accuracy of flood forecasts and provide scientists** with more precise monitoring of impending [droughts, rising sea levels](#), and life on Earth.
- One major thrust of the mission is to **explore how oceans absorb atmospheric heat and [carbon dioxide](#) in a process** that naturally regulates global temperatures and has helped to minimize [climate change](#).
 - **Oceans are estimated to have absorbed more than 90% of the excess heat trapped in Earth's atmosphere** by human-caused [greenhouse gas emissions](#).

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. What is 'Greased Lightning-10 (GL-10)', recently in the news? (2016)

- (a) Electric plane tested by NASA
- (b) Solar-powered two-seater aircraft designed by Japan
- (c) Space observatory launched by China
- (d) Reusable rocket designed by ISRO

Ans: (a)

Exp:

- Greased Lightning-10 (GL-10) is **NASA developed battery-powered plane** with 10 engines that can take off and land like a helicopter and fly efficiently like an aircraft.
- It is a **remotely piloted plane having a 3.05-meter wingspan**, eight electric motors on the

wings, and two electric motors on the tail and weighs a maximum of 28.1 kilograms at take-off.

- **Therefore, option (a) is the correct answer.**

[Source: TH](#)

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