

ESA satellites help us to make the most of Earth’s precious water



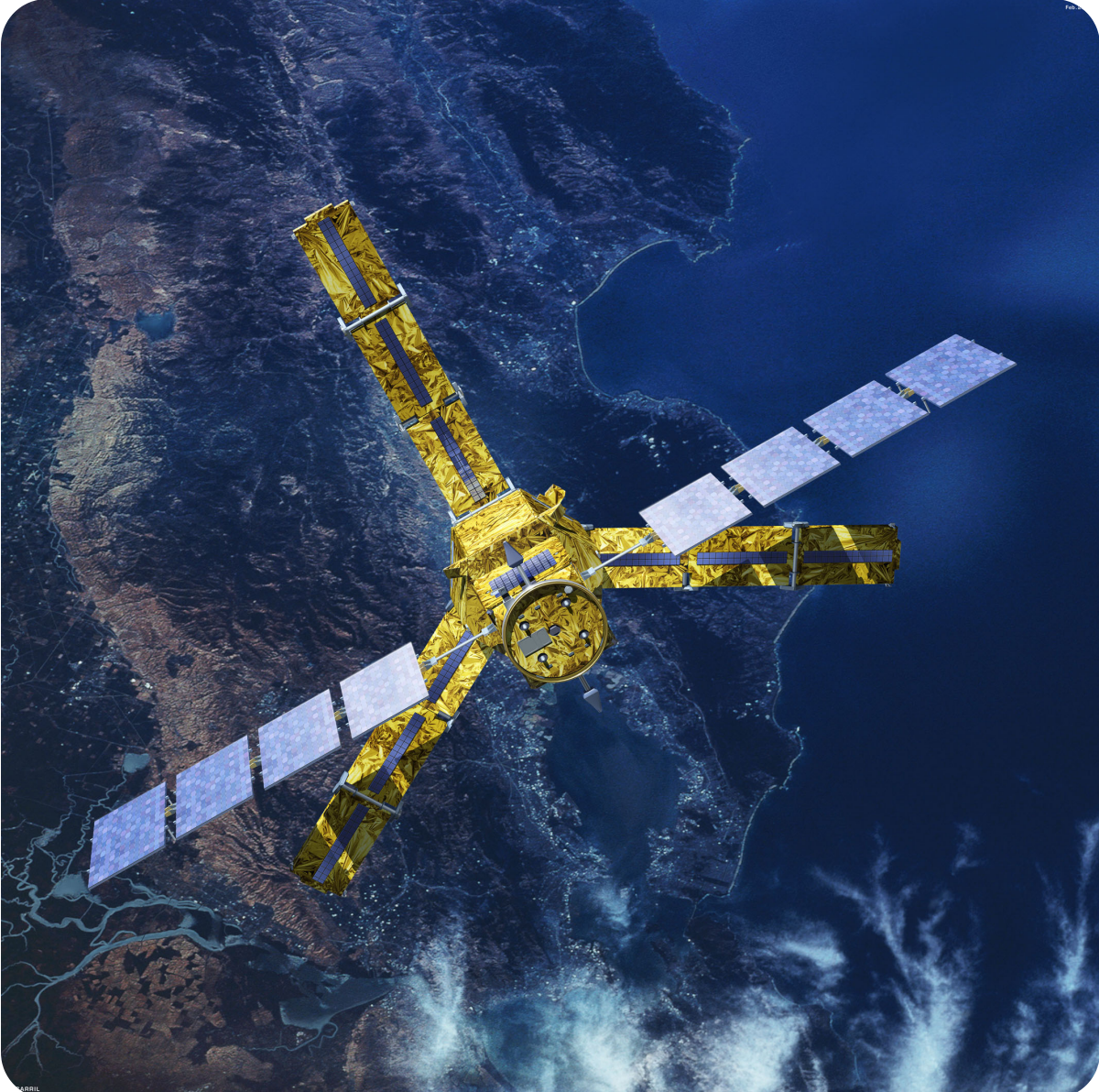
The Aral Sea as seen from space. It used to be one of the largest lakes on Earth, but has now shrunk into several smaller lakes separated by desert. Copyright: ESA/Belspo – produced by VITO

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When you are thirsty, do you turn on the tap to get a drink of water? If you do, consider yourself lucky, because around the world more than two billion people have to live without easy access to safe water – and four billion people suffer severe water shortages for at least a month out of every year. With the world’s population growing, and climate change creating challenges, water will become an even more precious resource.

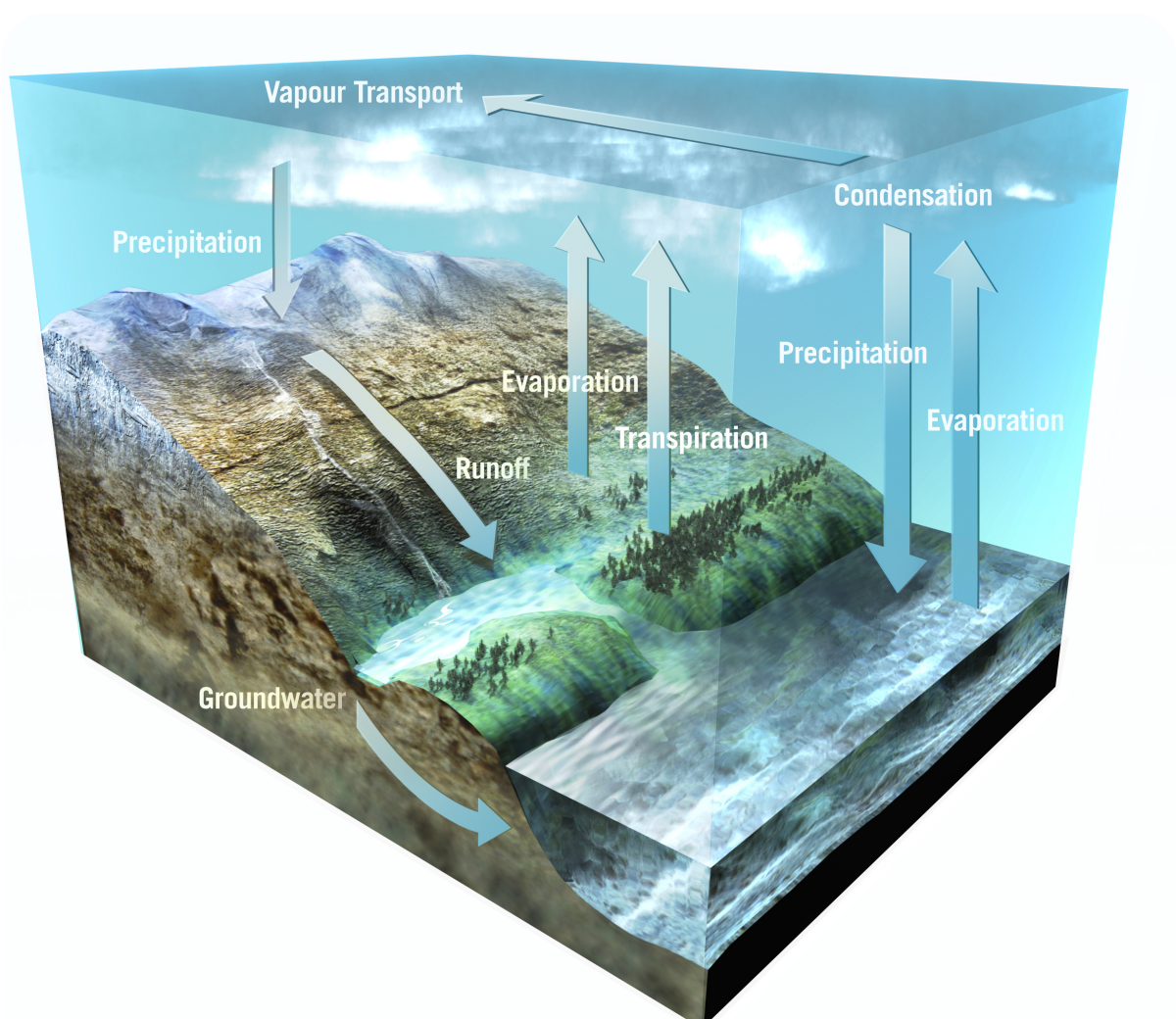
Photos of Earth from space show our world to have vast oceans, so you may wonder why water shortages are so common. Have you heard the phrase, “water, water, everywhere, but not a drop to drink?” Although our oceans are huge, less than 3% of the water on Earth is freshwater that may be safe to drink – and most of this actually makes up icecaps and glaciers, where people cannot easily get to it. In total, less than 1% of Earth’s water is available for drinking, farming, industry, and everything else we need. No wonder sometimes people run out!



ESA’s SMOS mission is one of many useful satellites in orbit, looking down on Earth and helping to track water supplies. Copyright: ESA - P. Carril

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ESA satellites are helping to monitor water supplies so that we can make use of every drop. ESA’s Soil Moisture and Ocean Salinity (SMOS for short) mission and the Copernicus Sentinel satellites track soil moisture levels on farms, so the right amount of water can be used to grow crops. ESA satellites such as Sentinel-1, Sentinel-2, and CryoSat can also be used to watch how glaciers change. This is important because glaciers affect how much water will be available to people in certain areas. For example, ice from part of the Himalayan mountains known as “the third pole” (because they contain the largest amount of freshwater after the north and south poles) provides freshwater for over 1.3 billion people in Asia. That is nearly 20% of the world’s population!



Water is continually being circulated between the oceans, the atmosphere, and the land. This is called Earth’s water cycle. Copyright: ESA/AOES Medialab

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The next time you have a drink of water, take a moment to think about where it has come from, and how ESA satellites are helping people all over the world to make the most of our planet’s water!

Cool fact: The same water has existed for billions of years, cycling through the air, oceans, lakes, rocks, animals, plants, and back again. The water you drink today may have once been inside a dinosaur!