

Is the North-Western Sahara aquifer system recharged?

Here, we use gravity data and groundwater flow modeling to provide further evidence of modern recharge of the North-Western Sahara Aquifer System (NWSAS, Algeria, Tunisia, and Libya).

What is intensive farming in the North Western Sahara aquifer system?

Intensive farming in sandy soils with a high water table (1 to 2 m below the sand) in the North Western Sahara Aquifer System: (a) aquaculture, (b) date plantation, with surface drains installed to remove brackish water, and (c) a large canal network to drain the brackish water.

Did Sahara aquifers recharge during the Holocene?

Sahara aquifers are often taken as an illustration of how large fossil reservoirs recharged during the wet periods of the Quaternary (e.g., the Holocene), but otherwise received virtually no recharge. This view was contradicted for the NWSAS by hydrogeological modeling and geophysical approaches using GRACE data.

Are fossil Sahara aquifers sustainable?

In recent years, geochemical and geophysical studies have challenged the commonly held view that the use of fossil Sahara aquifers is completely unsustainable because they have not been recharged since the last wet period of the Holocene.

What is a traditional Sahara landscape?

(a) Traditional Sahara landscape, (b) the traditional ghout system of farming date palm. The ghout system consists of digging into the sand to plant date palm at the top of the groundwater.

Does the Green Sahara have a rainfall regime?

Rainfall regimes of the Green Sahara. Science Advances 3(1). DOI: 10.1126/sciadv.1601503. 2012. We'll drink to that: Massive underground reserves of water found in some of Africa's desert areas--including the Sahara Desert.

The North Western Sahara Aquifer System (NWSA), better known under the acronym SASS for its French name Syst^{me} Aquif^{re} du Sahara Septentrional, is a large aquifer shared by Algeria, Libya, and Tunisia. The NWSAS designates ...

The North-Western Sahara Aquifer System (NWSAS) covers a total area of over one million km²: 700 000 km² in Algeria, 80 000 km² in Tunisia and 250 000 km² in Libya. It contains sedimentary deposits that have two main levels of aquifers, the Intercalary Continental (IC) and ...

We formulate a hydro-economic model of the North-Western Sahara Aquifer System (NWSAS) to assess the effects of intensive pumping on the groundwater stock and examine the subsequent consequences of aquifer

depletion. This large system comprises multi-layer reservoirs with vertical exchanges, all exploited under open access properties.

The North Western Sahara Aquifer System (NWSA), better known under the acronym SASS for its French name *Système Aquifère du Sahara Septentrional*, is a large aquifer shared by Algeria, Libya, and Tunisia. The NWSAS designates the superposition of two main deep aquifer layers: the Intercalary Continental (IT) and the Terminal Complex (TC).

This paper aims to reveal and to assess the renewability of North Western Sahara Aquifer System (NWSAS) as one of the major transboundary multi-layered aquifer system, in North Africa, shared...

AGRICULTURE DEVELOPMENTS IN THE NORTH WESTERN SAHARA AQUIFER SYSTEM. The NWSAS covers an area of 700,000 km² in Algeria, 250,000 km² in Libya, and 80,000 km² in Tunisia (270,000 mi², 96,500 mi², and 30,800 mi², respectively). It is North Africa's largest groundwater reserve.

The North-Western Sahara Aquifer System (hereafter designated as NWSAS, Fig. 1), extends over 10 6 km² under Algeria, Tunisia, and Libya. These aquifers, some of which are artesian over most of their distribution area, respond much more slowly to meteorological conditions than do surface water bodies, which increases their resilience to ...

This paper aims to reveal and to assess the renewability of North-Western Sahara Aquifer System (NWSAS) as one of the major transboundary multi-layered aquifer system, in North Africa, shared by Algeria, Tunisia, and Libya and is often referred to as the *Système Aquifère du Sahara Septentrional* (SASS).

the Sahara Desert has vast aquifers at shallow depths. These aquifers were created during the Paleoclimatic regimes of the North African Sahara characterized by the alternating wet and dry periods over the past several million years (Abotalib et al. 2016). During the Green Sahara period (11,000 to 5,000 years before the present),

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[1] The North-Western Sahara Aquifer System (NWSAS), one of the world's largest groundwater systems, shows an overall piezometric decline associated with increasing withdrawals. Estimating the recharge rate in such a semiarid system is challenging but crucial for sustainable water development.

In order to carry out an effective program for sustainable development of the North Western Sahara Aquifer System (NWSAS) deep aquifer in southern Tunisia "Oriental Erg of North Africa Sahara," it is essential to assess risks of oil and gas production, intensity of irrigated agriculture, and climate variability.

