Changes in air and soil temperature and rainfall rates between 2018 and 2025 in the Wadi Fida region

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Abstract

In this research, we examined the changes in temperature and rainfall rates in our region over the past two years compared to 2018 data, using atmospheric protocol tools, historical GLOBE data, and satellite data. Our findings led us to some recommendations regarding environmental awareness and promoting environmental sustainability

Research question

- Is there a noticeable change in air temperatures in the Wadi Fida area during the past six years between 2018 and 2025
- Is there a clear change in soil temperatures in the Wadi Fida area during the past six years between 2018 and 2025
- Is there a change in the rainfall rate between 2018 and 2025, and is it related to the flow of water again in the Al-Khali area of Wadi Fada

Introduction

The world is witnessing climate change, which is observed through changes in temperature, rainfall, and changes in its timing and amounts, which may lead to different environmental phenomena that require humans to adapt to them and reduce their effects on their lives

witnessed have shown that the climate of the Sultanate of Oman has temperatures over the past thirty years, and this rise has Ha rise in ,reached more than 1.2 degrees as an average increase. Likewise minimum temperatures have witnessed a clear rise in several places in th Sultanate of Oman, and the highest minimum temperature in the world was recorded in Qurayyat several years agoreaching 41 Celsius

Result and discussion

Using data collected through atmospheric protocol instruments, historical international site data from the past six years, and NASA Power site data, and after statistical processing, we found that

There is a clear change in maximum and minimum air and soil temperatures between 2018 and 2025

We note an increase in maximum air temperatures, - which has led to an increase in the daily temperature range. This indicates that a change in the region's .climate has begun recently

We observe an increase in maximum and minimum soil temperatures between 2018 and 2025

We have noticed an increase in rainfall rates in the last two - years compared to what they were 6 years ago, and this is due to the change in temperatures

The difference in rainfall rates and the existence of months with heavy rainfall led to the return of water to the Al-Khali area in Wadi Fida after it had been cut off for years

Research Methods

Monitoring air and soil temperatures for October and November

Data were extracted from the GLOBE environmental program's international website regarding maximum and minimum air temperatures observed by the school's GLOBE team in October and November of 2018 and 2025.

Place the previous data into Excel spreadsheets, analyze it, and calculate Use NASA Power to extract data on rainfall rates in the research area during the specified period and place it in an Excel spreadsheet e the average

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