



© Silvia Gambellini



The ancient desert city of Avdat flourished from 300 BC to 200 AD. It was located along the Incense Route for trading incenses and spices that connected Arabia to the Mediterranean. Avdat is a UNESCO World Heritage Site.



© Eran R

Panorama of the Zin Valley from Sede Boker.

Har HaNegev

ISRAEL

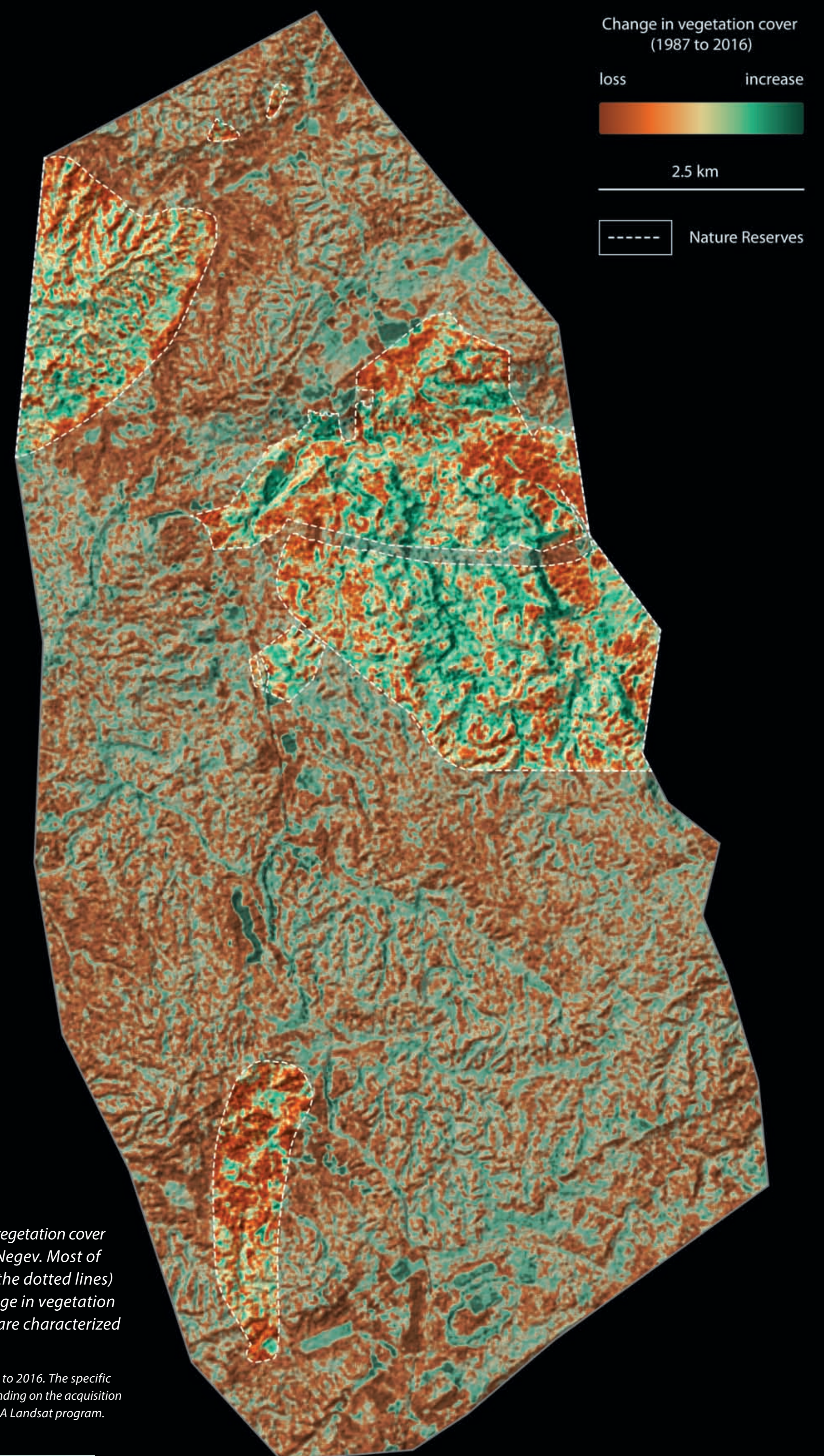
Located in the heart of the Negev Desert in Israel, the Negev Highlands ("Har HaNegev") cover an area of 445 km². This protected area includes a national park, the UNESCO World Heritage Incense Route, and several national nature reserves established for their unique flora, fauna, water resources, geological features and archaeological values. The area also contains two urban settlements, several single-family agricultural farms, Bedouin settlements, as well as military bases and training areas.

The Negev is important both in terms of ecological conservation and its economic and residential development potential. Currently, the challenge is to support development while protecting its ecological integrity and biodiversity. Since the area has been populated and used intensively for at least the past 2,500 years, studying historical human-environment interactions can provide insights to guide future

development. For example, the Nabataeans, who established the city of Avdat in 300 BC as a station on the Incense Route, facilitated desert agriculture by building wide-scale terracing to capture run-off and soil.

Many of these landscape modifications have endured and continue to affect ecosystem flows, productivity and species diversity. Some of the practices find current analogies in the grazing and rain-fed agriculture of the Bedouin communities or in the irrigated agriculture of single-family farms.

The ECOPotential project employs multiple methodologies to study human-environment interactions in the protected area, including remote sensing, biodiversity surveys and social research. These various research strands will be integrated to support policy-relevant directives for future development and conservation.



© Silvia Gambellini

Rock terraces have been built across the wadis to capture runoff and to generate gradual deposition of soil.



© Antonello Froseniale

A large Sternbergia, a flower that blooms in autumn and brings colour to the Har HaNegev.



© Eyal Itzhak

A single-family agricultural farm.

This image displays the change in vegetation cover from 1987 to 2016 in the Har HaNegev. Most of the nature reserves (seen within the dotted lines) have experienced a positive change in vegetation rehabilitation, while other areas are characterized by vegetation degradation.

Time series of 27 Landsat images from 1987 to 2016. The specific Landsat sensors are TM, ETM+, and OLI, depending on the acquisition year. Landsat imagery courtesy of USGS/NASA Landsat program.



© Amnon Karnieli

Two Nubian ibexes fighting. Since 1955 the Nubian ibex (*Capra nubiana*) has been protected and now there are 250 individuals in Har HaNegev. Nowadays, they fearlessly graze grass and plants in the nearby Jewish settlements.