

English Abstracts

Visitors Preferences in Forest Recreation Areas

■ Noga Collins-Kreiner¹ and Eran Ketter²

The study examined the characteristics, preferences, expectations and degree of satisfaction of visitors to KKL-JNF forests. The objectives of the study were to analyze visitors behavior and to formulate practical recommendations for managing and developing forest recreation areas in the field, the demands and visiting patterns of visitors to the various forests, the visit experience and the activities, infrastructure and services desired for development. The study was conducted in August-December 2019, based on the results of 538 questionnaires distributed at 16 KKL-JNF forests throughout northern Israel. The survey results indicate a high and very high level of satisfaction from visits to the recreation areas.

The study's main findings reveal visitors satisfaction with parameters they consider important – parking and vehicle accessibility, cleanliness and picnic facilities. KKL-JNF should keep cultivating these factors to maintain visitors satisfaction. On the other hand, there is a discrepancy between the significance visitors attach to the recreational facilities and the actual satisfaction from these facilities – an issue that should be taken into immediate consideration.

We suggest four policy recommendations based on the survey results: (1) upgrading the facilities in JNF-

KKL recreation areas; (2) developing attractions for visitors; (3) economic development in collaboration with the host community and (4) marketing and branding. We hope that these recommendations, which are supported by the analysis of demands and global trends, will help determine the desired future character of planning and implementation of KKL-JNF forest recreation areas as significant sites for leisure and tourism, to realize their full potential and make them anchors for tourism and economic development in northern Israel – in line with KKL-JNF's strategic vision for 2040.

Analysis of the Damage Caused to KKL Forests by the March 2020 Windstorm

■ Micha Silver, Asaf Yupiter Vanunu, Shayli, Dor-Haim, Moshe Shachak, and Arnon Karnieli¹

During the rainstorm of March 11-12, 2020, unusual wind caused heavy damage to the KKL-JNF forests, which manifested itself in the breaking and uprooting of many trees throughout the Lakhish area and south to the entrance to Be'er Sheva. This study deals with an extreme event that is expected to occur more frequently in our region as part of climate change. The project focuses on the Amatsiya and Shaharia forests, where most of the damage was concentrated.

Following the storm, KKL-JNF wardens conducted a ground and aerial survey to inspect, map,

1 Department of Geography and Environmental Studies, University of Haifa

2 Department of Tourism and Hospitality Management, Kinneret College on the Sea of Galilee
Nogack@geo.haifa.ac.il

1 The Remote Sensing Laboratory, Desert Research Institutes, Ben Gurion University of the Negev
karnieli@bgu.ac.il

and photograph the areas where the trees had fallen. At the same time, scientists at Ben-Gurion University's Remote Sensing Laboratory at the Sde Boker Campus analyzed the event using drone photographs, LiDAR, satellite images, meteorological data, and planting date data.

The findings in the Amatsiya Forest show agreement between the wind direction during the night of the storm and the direction of the fall. However, no significant correlation was found between tree density, topographic aspect, slope, and the number of trees that fell. The probable explanation for the extent of the damage in the Amatsiya Forest is, apparently, a combination of strong winds on the night of the storm with high soil moisture due to the heavy rains that fell in the area in January, February, and March. In the Shaharia forest, on the other hand, there was agreement between the number of trees that fell and the slope aspects. Therefore, it can be concluded that in Shaharia, more trees fell on southeast-facing slopes and in areas with sparse tree density.

Our conclusion is that remote sensing methods using drones, LiDAR, and satellite imagery (VENμS) can effectively map storm damage and accurately characterize spatial variables associated with damaged trees. A combination of topographic and meteorological data made it possible to assess the factors that caused these damages. Moreover, the study results show that from now on, the windstorm factor should be considered when monitoring forest systems managed by KKL-JNF.

Using Native Tree Species in Forestry in Israel and the World: Past, Present, Future

■ Tamir Klein

Israel's unique afforestation project gave a special place to its native tree species. However, failed afforestation attempts increased the use of nonnative species, such as certain species of eucalypt, acacia, and pine. The latter established well, yet in the long run there were negative effects on other plant species, animals and fungi. On the other hand, there has been progress in the identification of suitable ecotypes of native species, and select varieties have been developed (e.g. of Italian Cypress and Twisted Acacia), and lessons were learnt about protection from grazing and drought. The advantages of using native species in forestry – including their growth rate, habitat suitability, and interactions with other organisms – are increasingly acknowledged around the world. Using native species in relevant mixtures should facilitate the development of a native understory, which will better conserve Israel's unique ecosystems.

Department of Plant and Environmental
Sciences, Weizmann Institute of Science
Tamir.Klein@weizmann.ac.il