URIMPACT

URIMPACT Sample Report

Majmaah University Tree Planting Project

Analysis and impact assessment of **1,000 trees** planted at **Majmaah University** in Saudi Arabia

October 2025

Project Overview

Majmaah University Tree Planting Initiative

The Majmaah University Tree Planting Project is a strategic environmental initiative aimed at enhancing the campus ecosystem while contributing to Saudi Arabia's broader sustainability goals. This project has successfully planted 1,000 native trees across the university grounds.

Project Highlights

- Implementation period: March - June 2025
- Total area covered: 2.5 hectares across campus
- Water source: Treated wastewater recycling system
- Student involvement: 120+ student volunteers

Native Species Planted

- Phoenix dactylifera (Date Palm)
- Acacia gerrardii (Talh)
- Ziziphus spina-christi (Sidr)
- Prosopis cineraria (Ghaf)
- Olea europaea (Olive)

Key Project Metrics

1,000 Trees Planted	**87%** Survival Rate	**18 tons** CO_2 Sequestered
12 Local Jobs	**5** Native Species	**78/100** Biodiversity Score

Carbon Impact Analysis

Quantifying the environmental benefits of 1,000 trees at Majmaah University

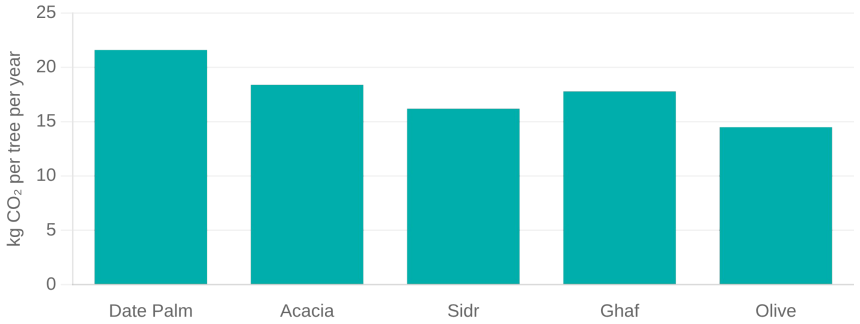
18 tons

Annual CO_2 Sequestration

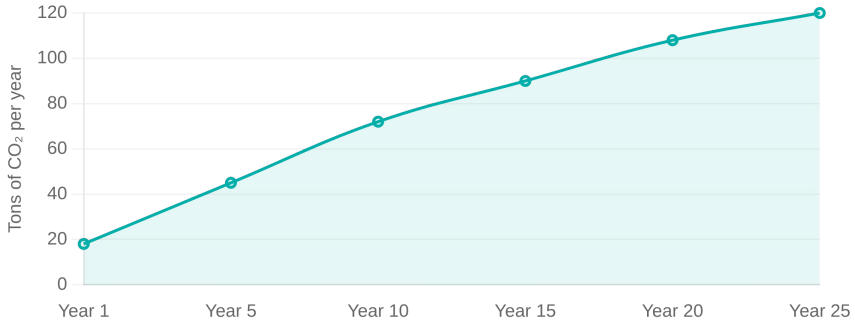
450 tons

Lifetime CO_2 Sequestration Potential

Annual Carbon Sequestration by Species



Carbon Sequestration Growth



Key Insight

Date Palm trees account for 35% of the total plantation but contribute 42% of the carbon sequestration due to their higher carbon capture efficiency in the local climate conditions.

Carbon Impact Equivalents

Equivalent To	Annual Impact
Passenger vehicles removed from road	4 cars
Household electricity offset	3 homes

Tree Growth Metrics

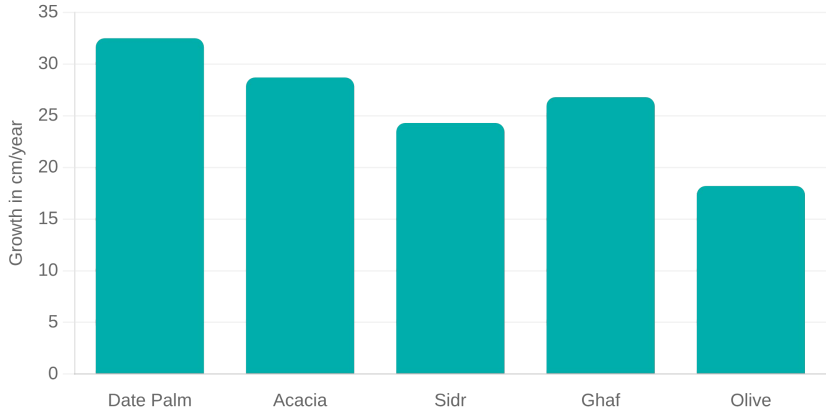
Monitoring growth rates and survival statistics at Majmaah University

1,000
Total Trees Planted
↑ 100% complete

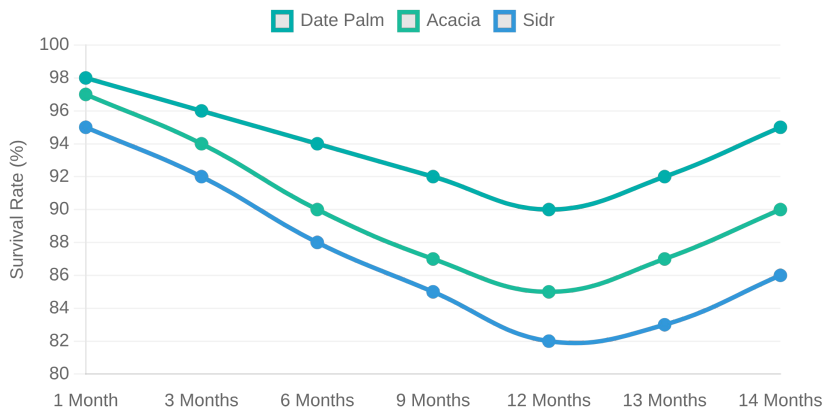
87%
Average Survival Rate
↑ 5% from last month

24.3 cm
Average Height Growth
↑ 8% from last month

Annual Growth Rate by Species (cm/year)



Survival Rate Over Time (%)



Community Impact

Social and economic benefits to the Majmaah University community

Community Engagement Metrics

12
Local Jobs Created

$8,500
Economic Value Generated

4
Research Projects Initiated

15%
Campus Temperature Reduction

Educational Opportunities

The project has created hands-on learning experiences for environmental science and agriculture students, with 3 new course modules developed around the initiative.

Community Engagement

Over 120 student volunteers participated in planting activities, with community workshops on sustainable landscaping reaching 250+ participants from the university and surrounding areas.

Wellbeing Benefits

Campus surveys indicate a 35% increase in student satisfaction with outdoor spaces, with 68% reporting improved mental wellbeing from access to new green areas.

Research Advancement

The project has enabled 4 new research initiatives on desert-adapted species and water conservation techniques, strengthening the university's environmental research profile.

Satellite Monitoring

Remote sensing verification for Majmaah University planting site

Satellite Monitoring System

Sentinel-2 Multispectral Imaging

10-meter resolution imagery capturing vegetation health through NDVI analysis at bi-weekly intervals.

Vegetation Health Tracking

Monitoring tree establishment across the 2.5 hectare planting site at Majmaah University campus.

Satellite Source	Resolution	Frequency	Key Metrics
Sentinel-2	10m	Bi-weekly	NDVI, Canopy Cover
Planet SkySat	0.5m	Quarterly	Tree Count Verification

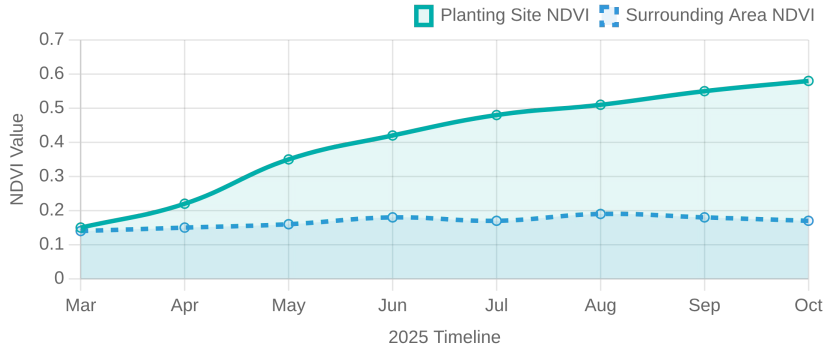
Monitoring Timeline

March 2025 Baseline imagery captured before planting

April 2025 Initial planting verification confirming 1,000 trees — Verified

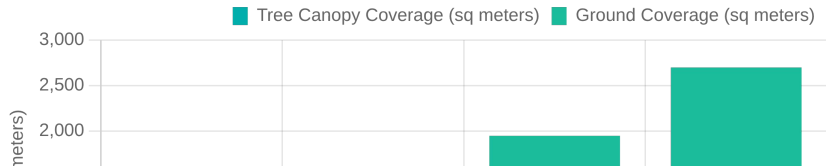
September 2025 Quarterly assessment confirming 87% survival rate — Verified

Vegetation Health Index (NDVI)



NDVI values range from -1 to 1, with higher values indicating healthier vegetation

Planting Site Coverage Analysis



Biodiversity Impact

Ecosystem health assessment at Majmaah University

Biodiversity Health Assessment

78

Biodiversity Health Score

Insect Population

35% increase in beneficial insect species, including pollinators

Bird Species

8 new bird species observed nesting in the planted areas

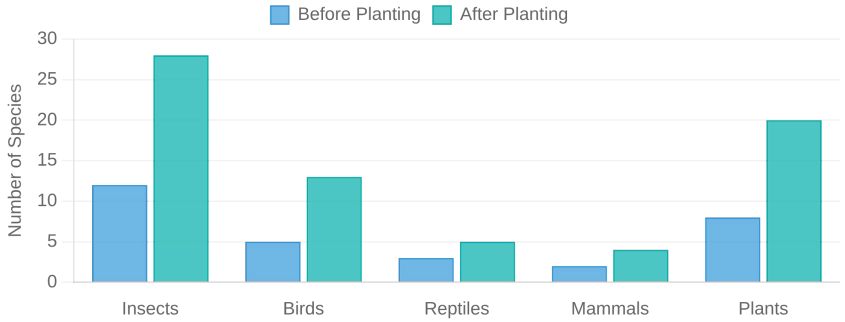
Plant Diversity

12 native understory plant species establishing beneath canopy

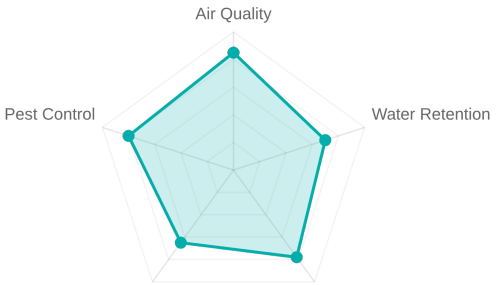
Key Findings

- Soil health improved with 22% increase in organic matter
- Microclimate benefits with 2-3°C temperature reduction

Species Richness Comparison



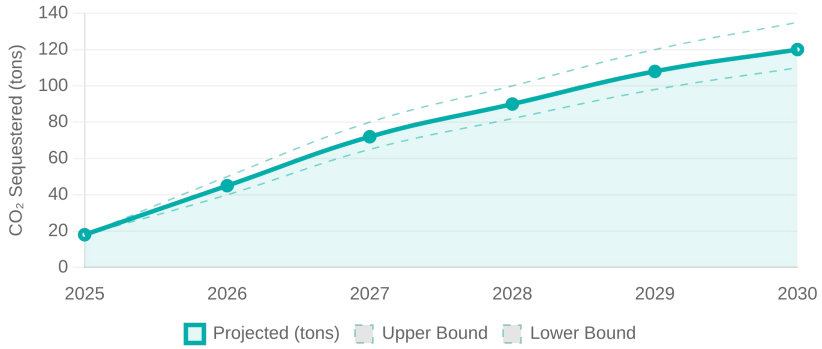
Ecosystem Services Value



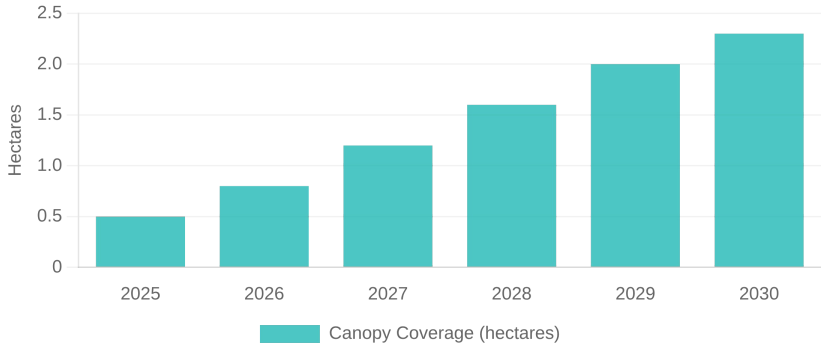
Future Impact Projections

Long-term environmental and social impact forecasting for Majmaah University

Carbon Sequestration Projection (5 Years)



Tree Canopy Coverage Projection (Hectares)



Key Milestones

2026 — 45 tons CO_2 sequestered

2027 — 870 trees reaching maturity

2030 — 120 tons CO_2 sequestered annually

Projection Methodology

- **Growth Rate Modeling:** Species-specific growth curves based on historical data from similar arid climate projects.
- **Carbon Calculation:** Allometric equations with species-specific carbon factors for native Saudi Arabian trees.
- **Confidence Level:** 85% based on Monte Carlo simulations accounting for climate variability and maintenance factors.

Conclusion & Recommendations

Key insights and next steps for Majmaah University tree planting initiative

Key Insights

1. The 1,000 trees planted at Majmaah University are sequestering 18 tons of CO_2 annually, with Date Palm species showing the highest carbon capture efficiency.
2. Community impact metrics show significant educational benefits with 120+ student volunteers engaged and 4 new research initiatives launched.
3. Biodiversity health score of 78/100 indicates positive ecosystem development, with notable increases in beneficial insect populations.
4. Sentinel-2 satellite monitoring confirms 87% average tree survival rate across all planting sites at the university campus.

Impact Summary

Recommendations

Optimize Species Mix

Increase the proportion of Date Palm and Acacia species in future plantings to maximize carbon sequestration while maintaining biodiversity.

Expand Academic Integration

Develop formal curriculum connections to leverage the planting site as a living laboratory for environmental science and sustainability courses.

Enhance Water Management

Deploy smart irrigation systems to improve water efficiency and survival rates, particularly during summer months.

Next Steps

- **Schedule quarterly monitoring** to track growth progress and adjust maintenance as needed
- **Implement ground sensors** to complement satellite data for more detailed environmental monitoring