Since 2019, the Khoinania Forest Restoration Project has restored 1.65 ha of previously alien invaded land and has planted 3720 indigenous trees through active restoration activities. In 2023, this project aims to supplement the existing sites planted during previous interventions through alien invasive plant management, natural regeneration management, and, where needed, active planting of 500 additional indigenous tree seedlings adjacent to the Tsitsikamma forest edge. These activities will thereby extend the forest edge while suppressing the re-emergence of invasive species. Supplemental interventions align with the adaptive management approach to restoration employed here, ensuring long term success of restoration sites even when faced with unforeseen circumstances acting as barriers to restoration success. By improving forest land use, through alien vegetation clearing and active restoration, this project will assist in providing several ecosystem services to the local landscape including climate change mitigation through increasing aboveground biomass stock, improved soil stability through improved infiltration, increased tree species diversity and improvements on forest quality and density.

PROJECT MAP:

Fig 1: Map showing forest restoration sites for the Khoinania Forest Restoration Project (Forest For Life: 7A, 7B &7C)
WHY IS THIS LANDSCAPE IMPORTANT?

The Tsitsikamma National Park is a protected area on the Garden Route, Western Cape and Eastern Cape, South Africa. It is a coastal reserve well known for its indigenous forests, dramatic coastline, and the Otter Trail. In 2009 it was amalgamated with the Wilderness National Park and various other areas of land to form the Garden Route National Park. The park covers an 80 kilometres long stretch of coastline with Nature’s Valley at the western end of the park. Various threats are continuously placing increased pressure on these protected forests, including increased return intervals of wildfires due to human activity and invasive vegetation, forest clearing for agriculture and climate change. As these forests host significant plant and animal biodiversity, the protection and restoration of previously forested areas are critical for the continued existence of these systems and the ecosystem services that they provide.

Similar to previous interventions, in 2023 this project will focus on clearing a small section of Black wattle to expand the area of alien vegetation controlled, while also conducting supplemental planting of indigenous seedlings in sites from previous years. Pre-planting interventions focus on removing alien vegetation (long-standing and re-emerging) and planting indigenous tree seedlings to introduce more local biodiversity to new and existing sites. This further suppresses the re-emergence of alien vegetation.

The larger area around Khoinania has been deforested in the past century for various agricultural purposes and has seen exceptional invasion by alien species that have excluded much of the indigenous species of fauna and flora. Pine plantations, eucalyptus stands and other invasive vegetation is also prominent in the surrounding landscape due to historic land-use change and invasion.

THE RESTORATION APPROACH:

Based on previous planting experience on this property, as well as through knowledge of indigenous forests, interventions started on this site through AVM to clear the site of invasive Black wattles. Due to the adverse soil conditions created by the alien vegetation on-site, swales will be reconstructed to assist in water catchment and infiltration and a strong focus will be placed on planting fast-growing, pioneer species (Keurboom - Virgillia oroboides) that have proven very successful within the larger project at Khoinania. Roughly 60-70% of the trees to be planted, successional will be Keurboom, to promote shade and environmental protection for slower growing species, as the Keurboom can grow significantly faster than other indigenous species. A total of 500 indigenous seedlings, consisting of forest trees and shrubs, pioneer species and old-growth species will be planted to supplement and support the surviving trees from previous sites, with 350 trees planted in the newly cleared site. After planting, AVM will continue to reduce resurgence of invasive species, and pioneer species will be managed accordingly (through “skirt-raising” or chopping-and-dropping”) to facilitate the successful establishment and growth of other planted species.

Project benefits include:

- Biodiversity conservation through increasing habitat availability for forest-dependent species
- Increased indigenous tree species
- Increased soil stability and health
- Improved water regulation
- Increased Carbon sequestration and climate change mitigation
- Economic benefits derived through resource utilisation of alien vegetation management

Restoring forests and forest landscapes is an important step in regaining the health and functionality of these ecosystems.
IMPACT 2019-2023

3 EDEN FESTIVAL OF ACTIONS HOSTED

563 PARTICIPANTS ENGAGED AT EDEN FESTIVAL OF ACTION

4,220 TREES PLANTED

43 SPECIES PLANTED

FEMALE-LED PROJECT

AVERAGE TREE HEIGHT AT SITE A (METERS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Keurboom</th>
<th>Cape Ash</th>
<th>Forest Elder</th>
<th>White Ironwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2021</td>
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<td></td>
</tr>
<tr>
<td>2022</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

3 PART-TIME EMPLOYEES

1.8 HECTARES OF ALIEN VEGETATION MANAGED

500 TREES TO BE PLANTED IN 2023
IMPLEMENTING ORGANISATIONS

The implementing organisations for the Khoinania Forest Restoration Project are the Greenpop Foundation and Khoinania Farm (Wild Spirit Lodge).