



Sustainable management of *Opuntia engelmannii* species in Lower Naibunga.



**CO-OPERATION FOR PEACE
AND DEVELOPMENT**

KNOWLEDGE FOR LIFE

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The Nature
Conservancy 

 **CABI**

Project Overview

The project “*Towards sustainable management of Opuntia species in Naibunga Community landscapes and Conservancy, Laikipia, Kenya*”, is a pilot project funded by TNC –Launched in Q3 Of 2023

Focus area: the Lower Naibunga Community land and conservancy bordering Loisaba conservancy

Opuntia engelmannii, has encroached thousands of hectares of land

The invasions pose serious threats to biodiversity as well as disrupting essential services of the local ecosystem that includes livestock production





Project objectives

Overall Aim: To sustainably manage *Opuntia* species in Naibunga Community Conservancy, Laikipia, Kenya.

Objectives:

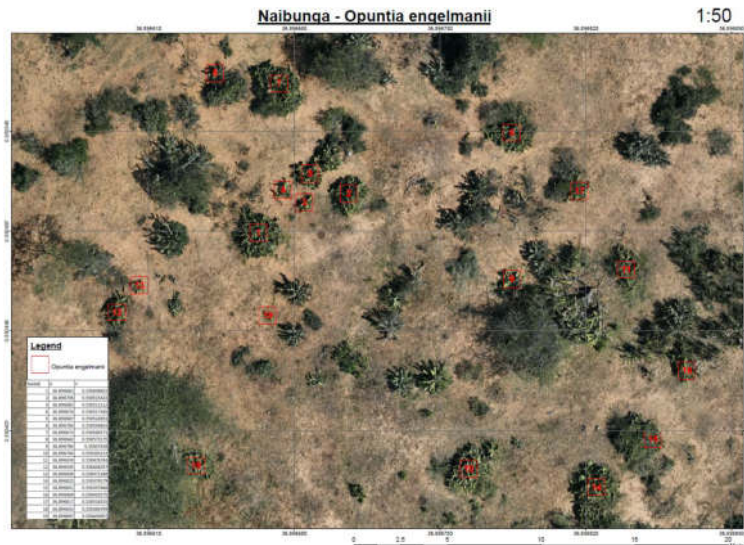
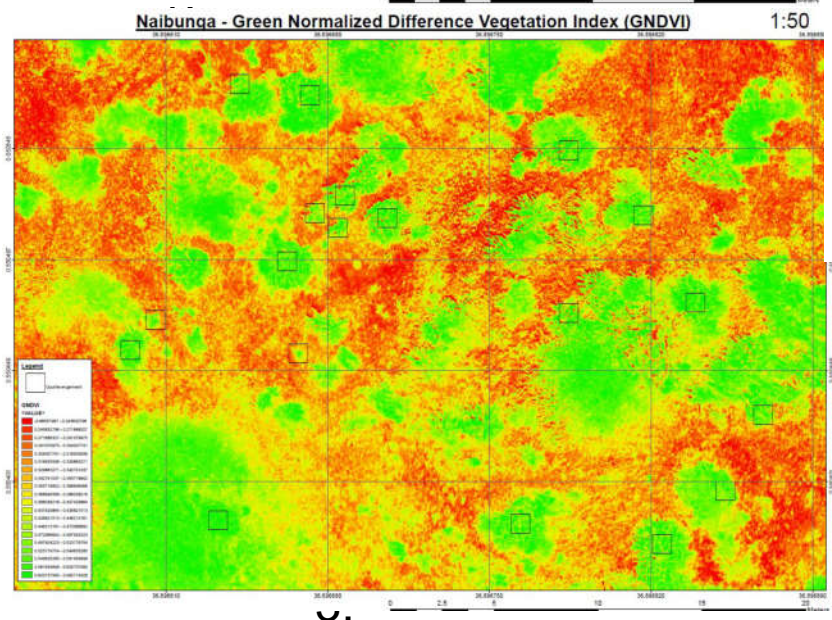
- To develop a comprehensive management plan for *Opuntia* species.
- To create awareness and build the capacity of communities on the management of *Opuntia* species.
- Construct cochineal breeding units within the community for mass rearing of the biocontrol agent against *Opuntia* species
- Release of reared agents

Project Progress 2023/2024

- Successfully launched the cochineal mass breeding units, demonstrating the viability of community-led initiatives.
- Utilized drone technology for mapping the presence of invasive cactus in targeted fields.
- Conducted ground truthing surveys laying transects in the field, systematically collecting data on cactus flowers, flower buds, fruits, and the number of cladodes. (Validate drone data)
- Implemented randomized transects in invaded fields to ensure a comprehensive pre-release assessment.
- Conducted focus group discussions to assess the knowledge and perceptions of community members regarding the cactus invasion and the biological control measures.



Outputs from drone mapping objectives



Launch of community led breeding units



Community voices



- *"Opuntia has been a persistent problem for over a decade now. We've tried traditional methods, but they haven't worked. We need new solutions."* Christine Meto
- *"I've seen the impact of Opuntia on my livestock. It damages their eyes and affects the quality of their offal, reducing market value. We need to find a way to control it effectively."* Neparingo Tereni,
- *"I've participated in distributing cladodes for Opuntia stricta control before and I will participate the same in management of O.E. We need more resources and support to make it more effective."* Alfred Lengingiro, Director Cooperation For Peace and Development (Laikipia County)
- *"I'm willing to contribute my time and land to help with Opuntia management. But we need incentives and support to sustain our efforts"* said Mattew Naiputeri-Koiya community conservancy chair.

Mass release of cochineal: next steps



- Establish a monitoring framework to track the spread and impact of the cochineal population. (Temporal and spatial)
- Regularly assess *OE* infestation levels and cochineal establishment.
- Adjust release rates or locations based on the observed impact and *OE* population dynamics.
- Establish more breeding houses
- Regularly report progress to stakeholders, including donors, government agencies, and the local community.
- Use drone imagery, field surveys, and data collection tools to evaluate the success of the biocontrol efforts.
- Complete drone mapping of entire Naibunga- implement EDRR and prevention
- Integrate the biocontrol program into broader conservation and land management plans.



Community engagement-Next steps

- Empowering communities through capacity building and training workshops-Biocontrol releases
- Monitoring and Reporting: Educate community members on monitoring techniques to assess the impact of the biocontrol program and encourage timely reporting
- Awareness campaigns using various mediums, such as workshops, community meetings, and educational materials on identification of *Opuntia* spp. ,about the biocontrol program's objectives and benefits
- Scaling Up the Project to cover a wider area of Naibunga (Central and upper Naibunga)
- Finalise *Opuntia* management plans for Naibunga Community Conservancy and bordering communities,



Spread of OE

It spreads through a variety of methods, and it is painfully hard to kill. Small chunks of a pad that break off from a plant can sprout roots and grow independently. Remnants of the cactus that people toss into gullies get washed into creeks or rivers when the rains come, soon to be reborn into menacing plants miles downstream. And elephants, baboons, and even human children are accelerating the cactus's spread by eating the fruit and defecating the seeds, and by breaking off the plant's stems when trying to access the fruit or nearby grasses, leaving chunks to take root and grow into new plants

Effect of opuntia

- Dense infestations of *O. engelmannii* lineages decrease the grazing potential of land and reduce access to livestock .
- **Livestock health is affect** (When livestock eat the cactus fruits, the small spines, It lodge in their mouths, throats, stomachs and intestines often causing infection and death.)
- **Human –wildlife conflict**
- Economic Impact.
- Used in production of biogas
- Its fruits are used to make jam and wine



Your questions