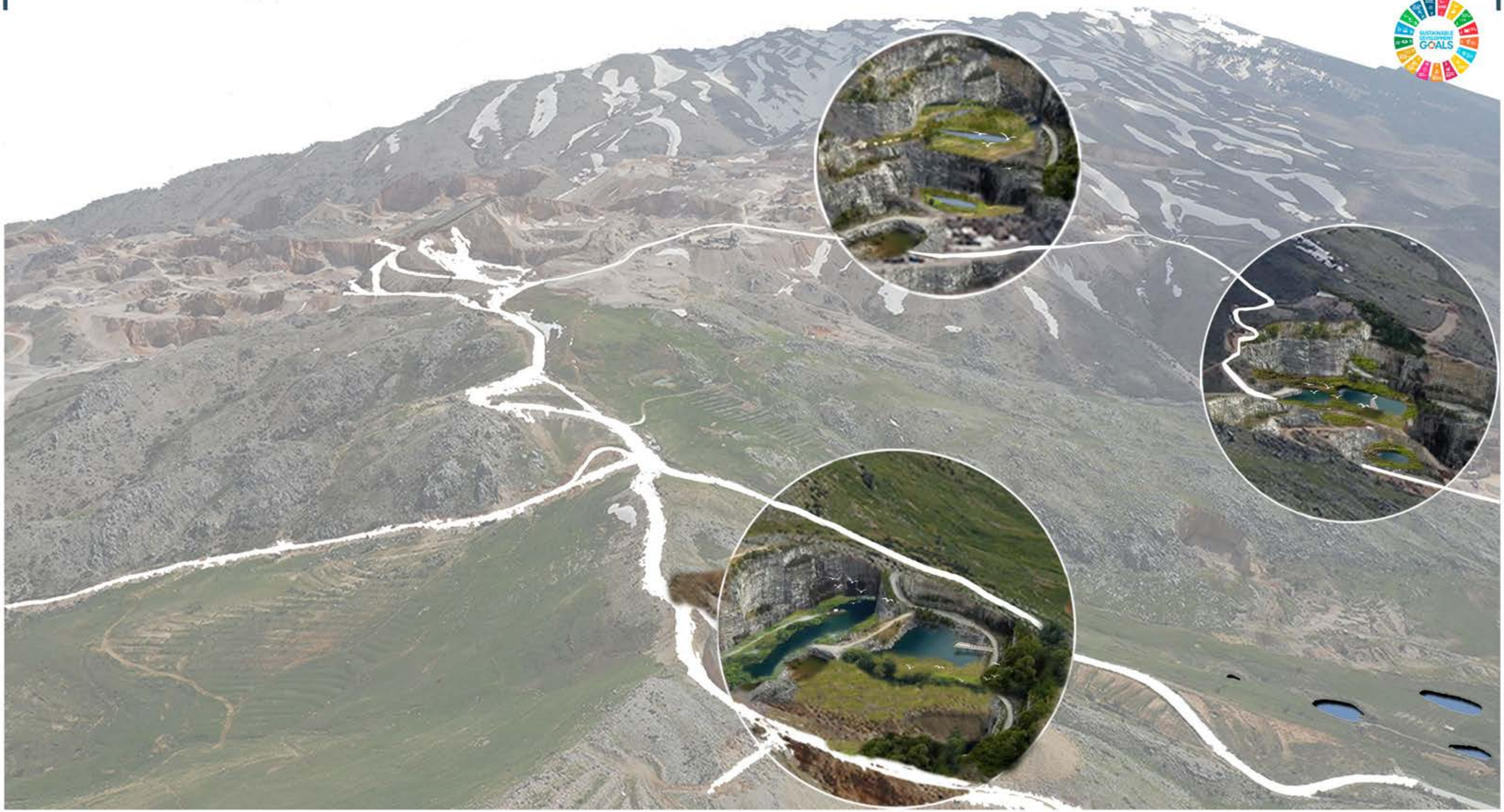


Country / City Beirut, Lebanon

University / School American University of Beirut

Academic year 2019-2020

Title of the project Ain Dara›s Hidden Ecological Potential: The Quarry Park

Authors Julia Abisaab

TECHNICAL DOSSIER

Title of the project	Ain Dara›s Hidden Ecological Potential: The Quarry Park
Authors	Julia Abisaab
Title of the course	Final Year Project: Landscape Implementation and Management
Academic year	2019-2020
Teaching Staff	Maria Gabriella Trovato - Balsam Al Ariss - Mona Khechen
Department/Section/Program of belonging	Landscape Design and Ecosystem Management
University/School	American University of Beirut

Written statement, short description of the project in English, no more than 250 words

Quarrying can be performed in a sustainable way. Instead, a vast majority of Lebanon's quarries are illegal, unregulated and rapidly destroying Lebanon's signature mountains. Despite being located within a conservation zone, the illegal quarrying activity has been affecting the village of Ain Dara (Lebanon) since the end of the civil war. Starting from 2009, and due to the countless locally-led protests, these quarries (16 out of 17 of them) have been shutting down, leaving the village to deal with significant ecological damage, an overall change in its landscape character and identity. Two quarry typologies are present in Ain Dara: sand quarries situated in the middle of a pine forest, causing immense ecological damage; and stone quarries that are located at a mountain top, affecting water flow and Ain Dara's natural landform.

The Quarry Park proposes a landscape intervention of ecological rehabilitation based on water management and re-vegetation techniques. It reclaims the disturbed ecosystem resulted from the mineral extraction while introducing a new process of water management (constructed wetlands designed for wastewater treatment, rainwater harvesting, and nutrient recovery) and quarry re-naturalization. The successful implementation of the proposal is expected to enhance flora and fauna diversity and to create microhabitats within these quarries while establishing ecological and aesthetical links between the site and the nearby ecological. The project also foresees commercial, educational and social activities at both local and regional levels, which are rooted in the Chouf Biosphere reserve culture.

For further information
Máster d'Arquitectura del Paisatge -DUOT - UPC

T: + 34 93 401 64 11 / +34 93 552 0842
Contact via email at: biennal.paisatge@upc.edu

Máster d'Arquitectura del Paisatge -DUOT - UPC
ETSAB - Escola Tècnica Superior
d'Arquitectura de Barcelona
Avenida Diagonal, 649 piso 5
08028 Barcelona-Spain

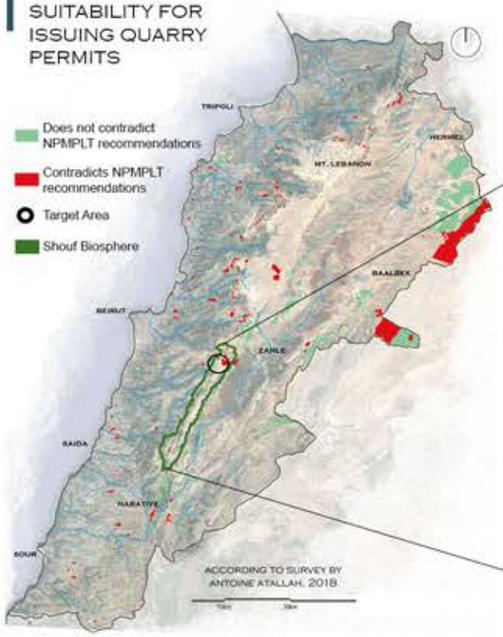
CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

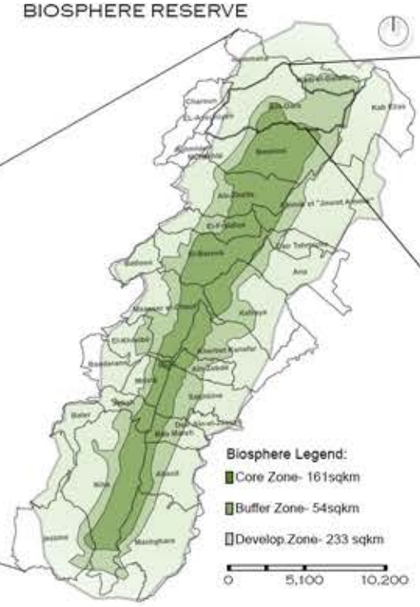
Barcelona September 2020

SCHOOL PRIZE

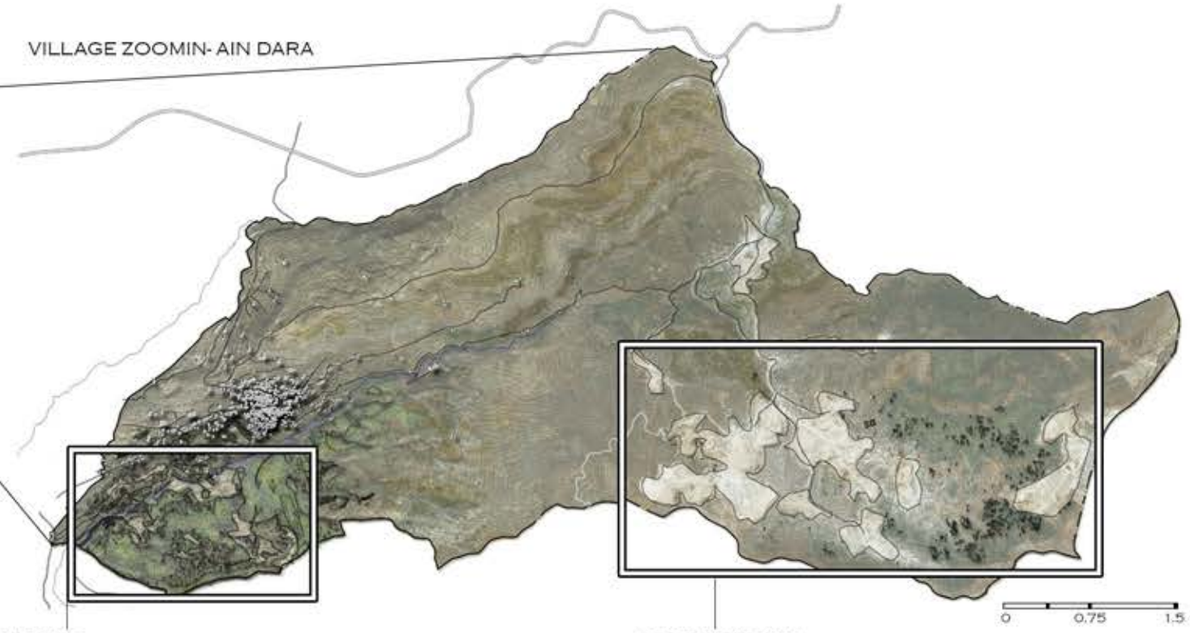
SUITABILITY FOR ISSUING QUARRY PERMITS



BIOSPHERE RESERVE

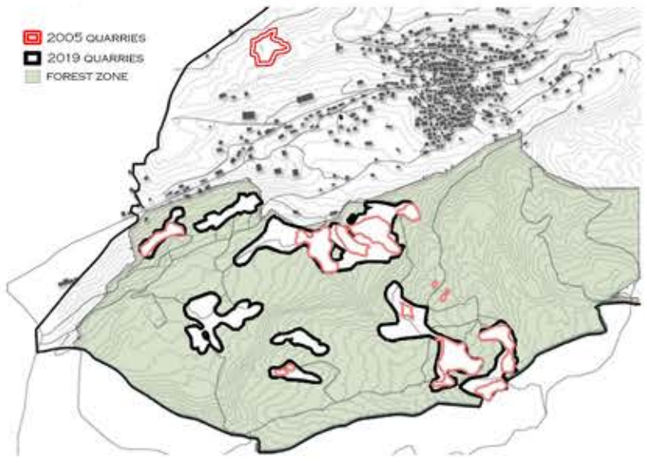


VILLAGE ZOOMIN- AIN DARA

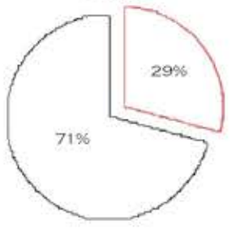


PROBLEMATIC: UPON STUDYING THE DEVELOPMENT OF THE QUARRIES SINCE 2005 TILL 2019, IT WAS REALIZED THAT NOT ONLY HAVE THEY BEEN DAMAGING THE ECOSYSTEM, BUT THEY HAVE ALSO BEEN AFFECTING LOCALS' HEALTH &CONTAMINATING POTENTIALLY USABLE WATER

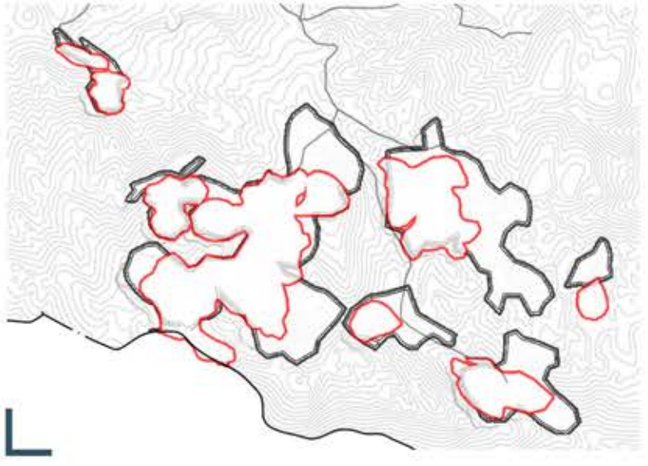
SAND QUARRY



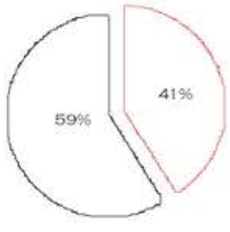
CHANGE IN QUARRY OCCUPATION WITHIN STUDY AREA OVER SPAN OF 10 YEARS



STONE QUARRY



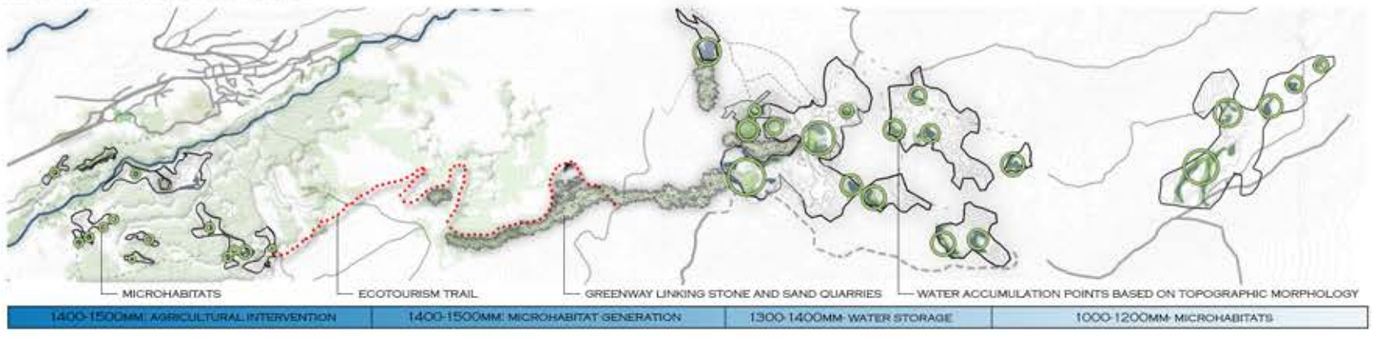
CHANGE IN QUARRY OCCUPATION WITHIN STUDY AREA OVER SPAN OF 10 YEARS



SAND QUARRIES

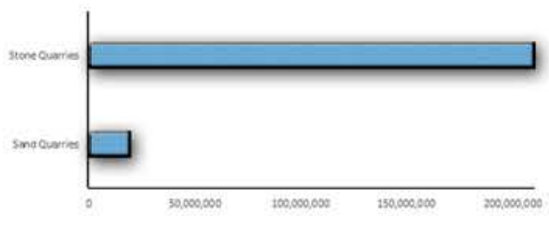
STONE QUARRIES

DESIGN STRATEGY: AIMING TO REINTERPRET AIN DARA'S CHARACTER MAINLY THROUGH THE INTRODUCTION OF WATER RESOURCE MANAGEMENT SUCH AS BIOFILTRATION ZONES, RETENTION PONDS, ETC.AND VEGETATIVE TECHNIQUES WHICH AIMSTO SATISFY THE GOAL OF CREATING NEW MICROHABITATS TO GENERATE NEEDED HETEROGENEITY IN THE AREA.

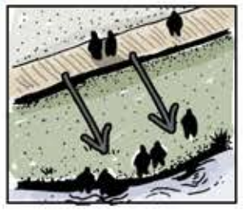


EXISTING WATER PONDS IN VILLAGE- DESIGN INSPIRATION

AMOUNT OF RANIFALL COLLECTED PER YEAR (L)

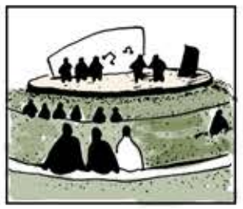


CONNECTIVITY TO WATER

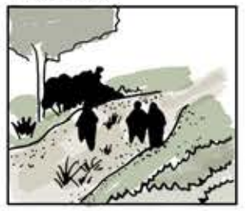


AQUATIC PLAYGROUND

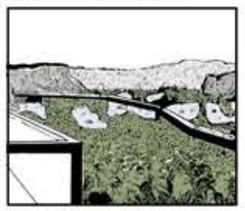
FESTIVAL SPACE



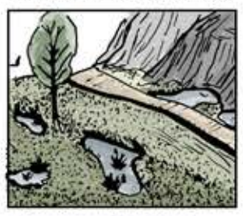
HIKING TRAIL



VIEWING PLATFORMS

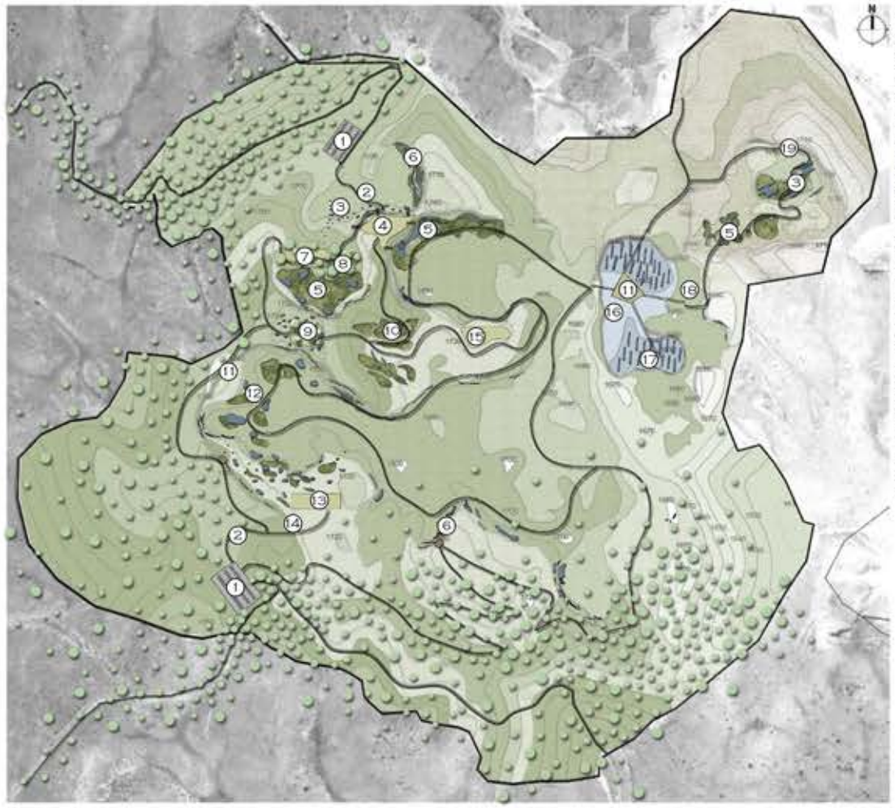


WATER COLLECTION PONDS



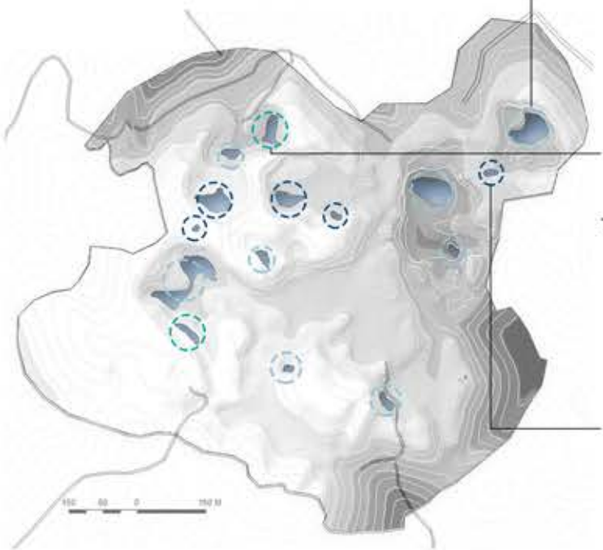
BIRDWATCHING ZONES

MASTER PLAN

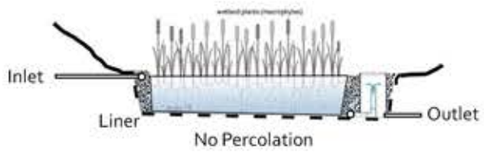


WATER MANAGEMENT STRATEGIES

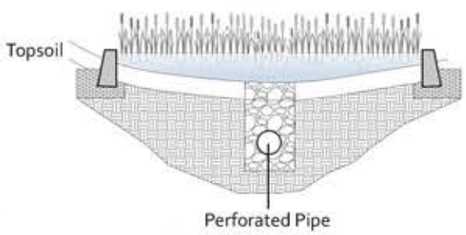
TOPOGRAPHY & HYDROLOGY



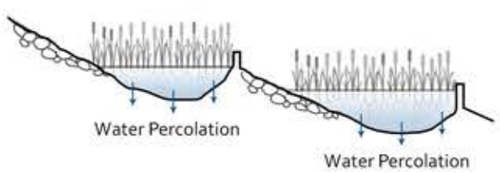
CONSTRUCTED WETLANDS



TERRACED BIOSWALES



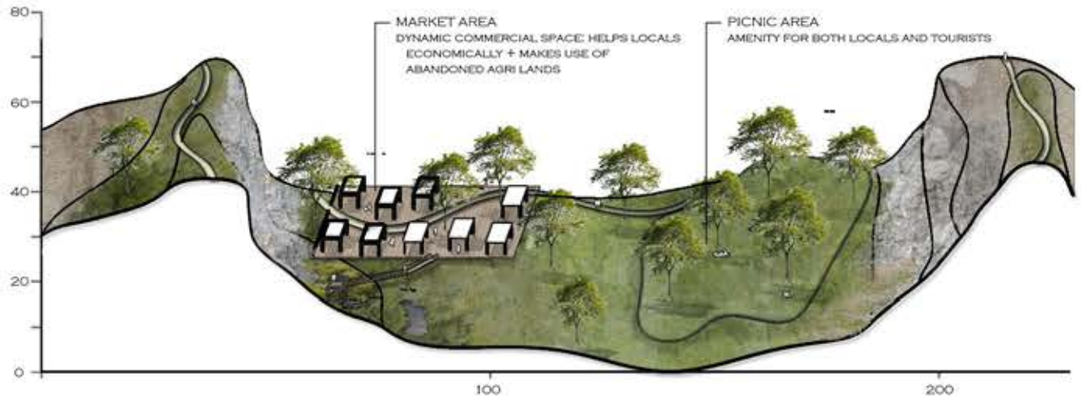
RAINGARDENS



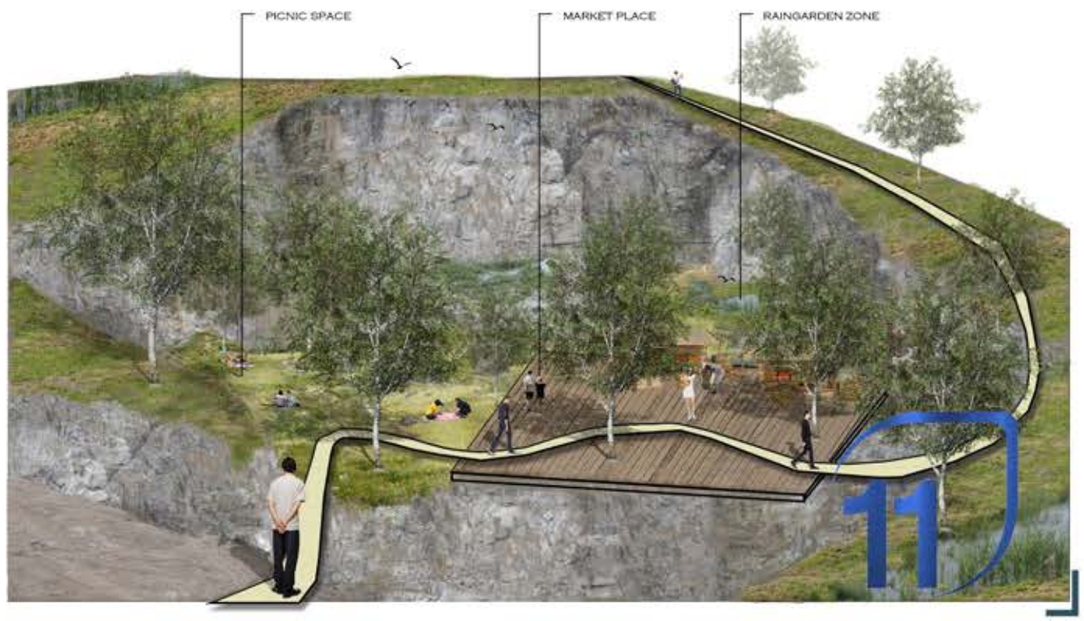
KEY MAP

ZONE 1: COMMERCIAL ZONE

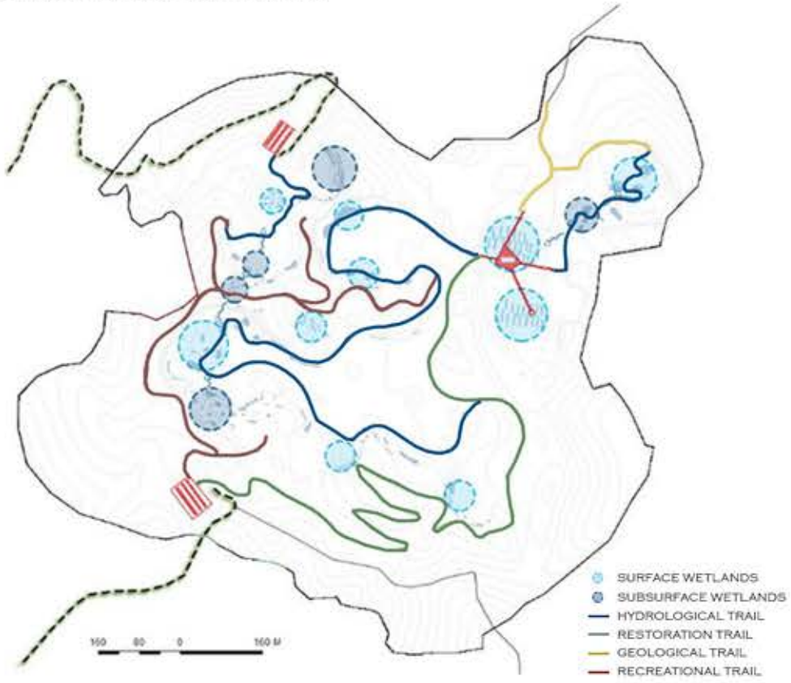
DYNAMISM IN ACTIVITIES CATERING FOR THE LOCALS' NEEDS



COEXISTENCE OF MICROHABITAS AND SOCIAL SPACES

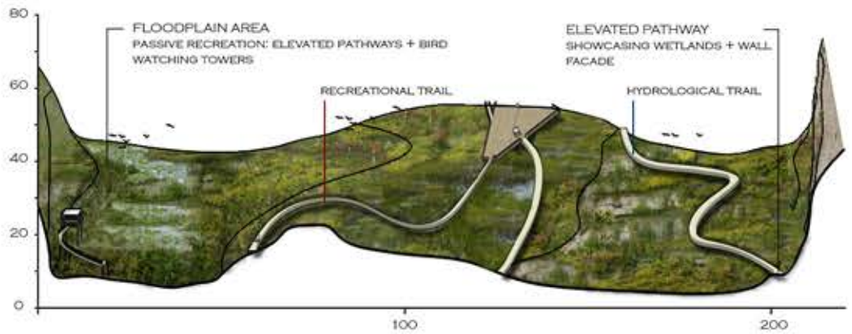


WETLAND & TRAIL TYPOLOGIES

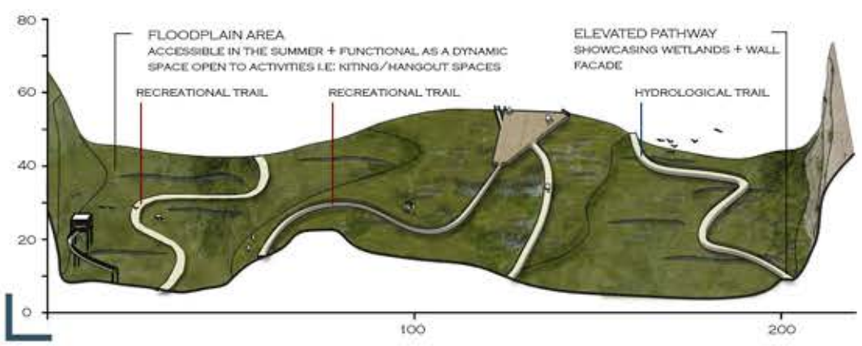


ZONE 2: ECOLOGICAL/ACTIVE LEISURE AREA

SPRING/WINTER



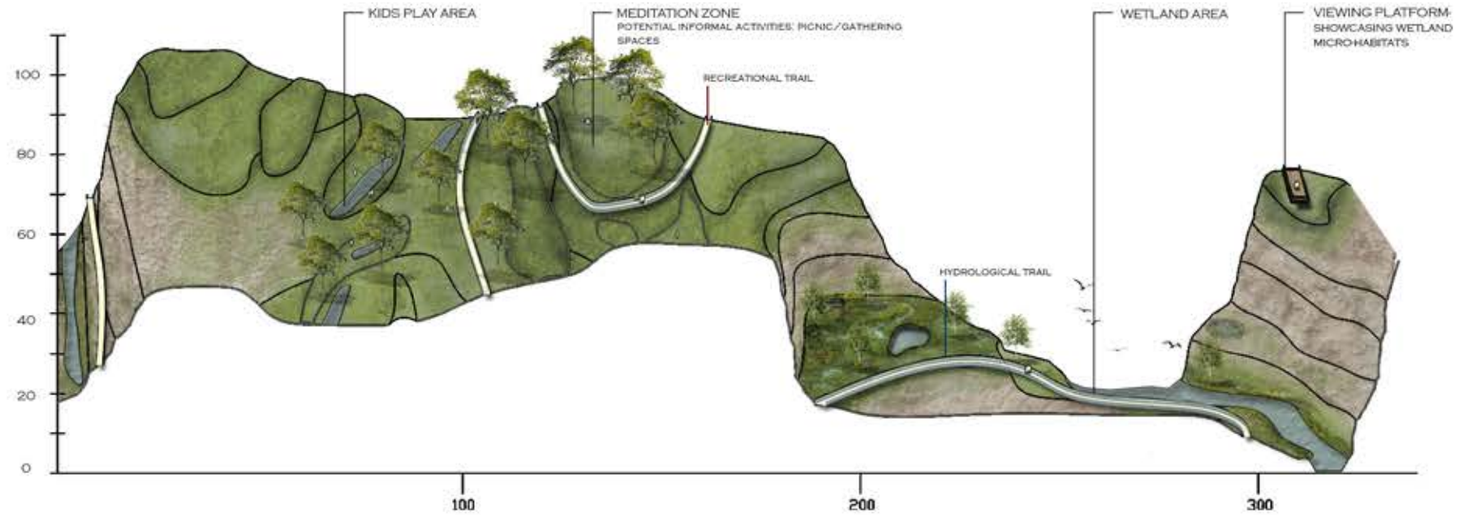
SUMMER/FALL



KEY MAP

ZONE 3 ECOLOGICAL/ PASSIVE LEISURE AREA

DYNAMISM IN ACTIVITIES CATERING FOR THE LOCALS' NEEDS



COEXISTENCE OF ECOSYSTEMS WITH THE SOCIAL LAYER