Udzungwa Mountain National Park Canopy Walk

Daniel Nichols and Paul Kawoczka

Table of Contents

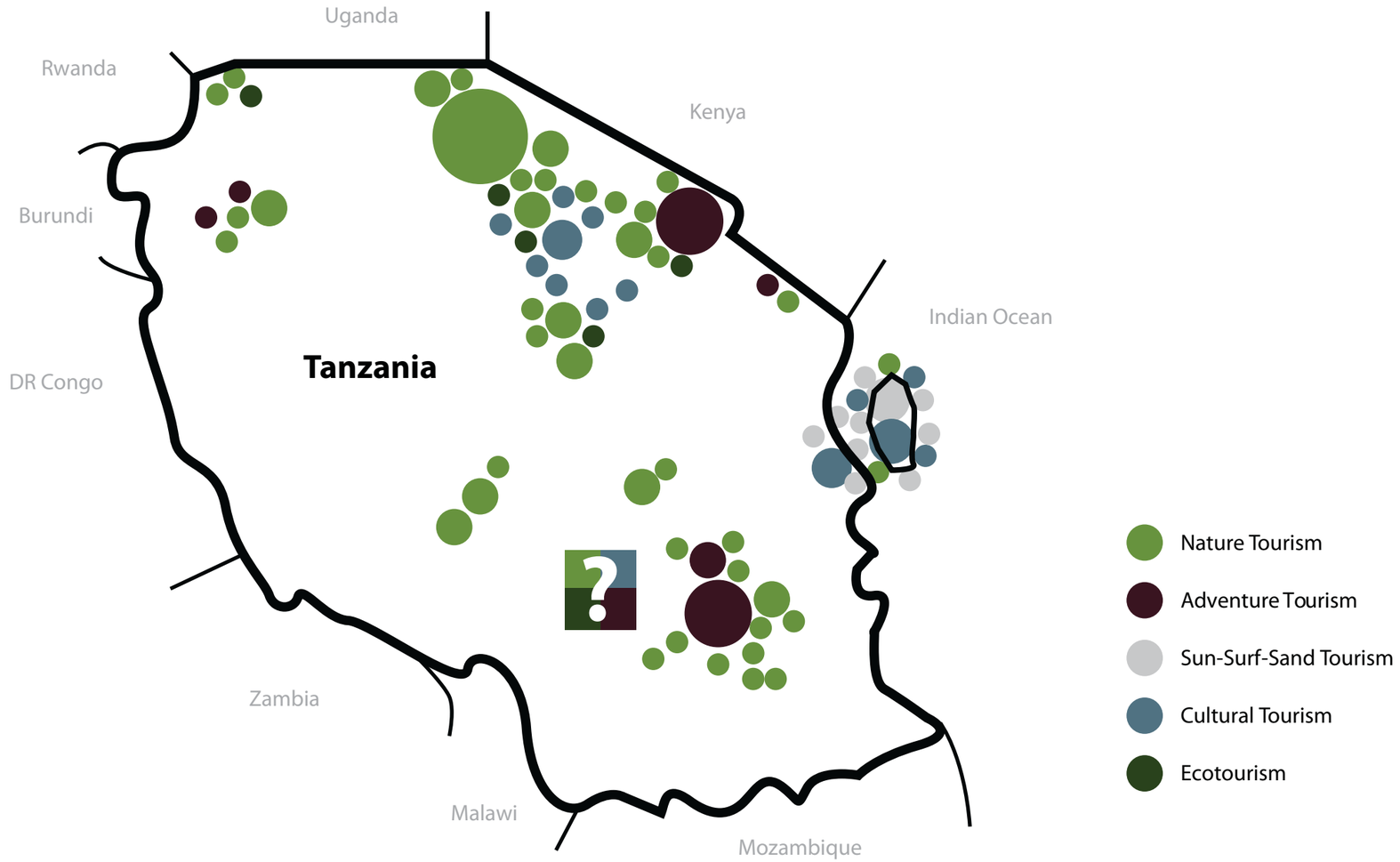
Intro to Tourism in Tanzania

Tanania's Tourism Growth

Year	1969	1972	1976	1979	1985	1989	1992	1995	1997	2000	2002	2004
Arrivals (in thousands)	51	63	167	78	59	138	202	295	359	502	575	582
Receipts (in millions)	--	$20	$95	--	$14	$60	$120	$259	$392	$739	$730	$746

(Honey 227, 2008)

Tourism is currently the second largest industry in the country after agriculture. Tourism is widely hailed as a bridge between poverty alleviation and biodiversity conservation in Tanzania, as it provides economic incentive to local populations to conserve rather than consume Tanzania's unique natural resources. In 2002, then-President Benjamin Mpaka declared "a heightened onslaught on poverty, using the weapon of tourism". Tourism is currently Tanzania's second largest industry behind agriculture; in 2004 foreign investments in the tourism sector topped US $360 million. However, the associated benefits of job creation, increased wage earning, and infrastructure development have been concentrated around Mt. Kilimanjaro, the Northern Safari Circuit, and the coastal island of Zanzibar. For rural populations in southern Tanzania to receive direct economic benefits from tourism, the region must start taking advantage of the unique tourism offerings of the Eastern Arc Mountains.

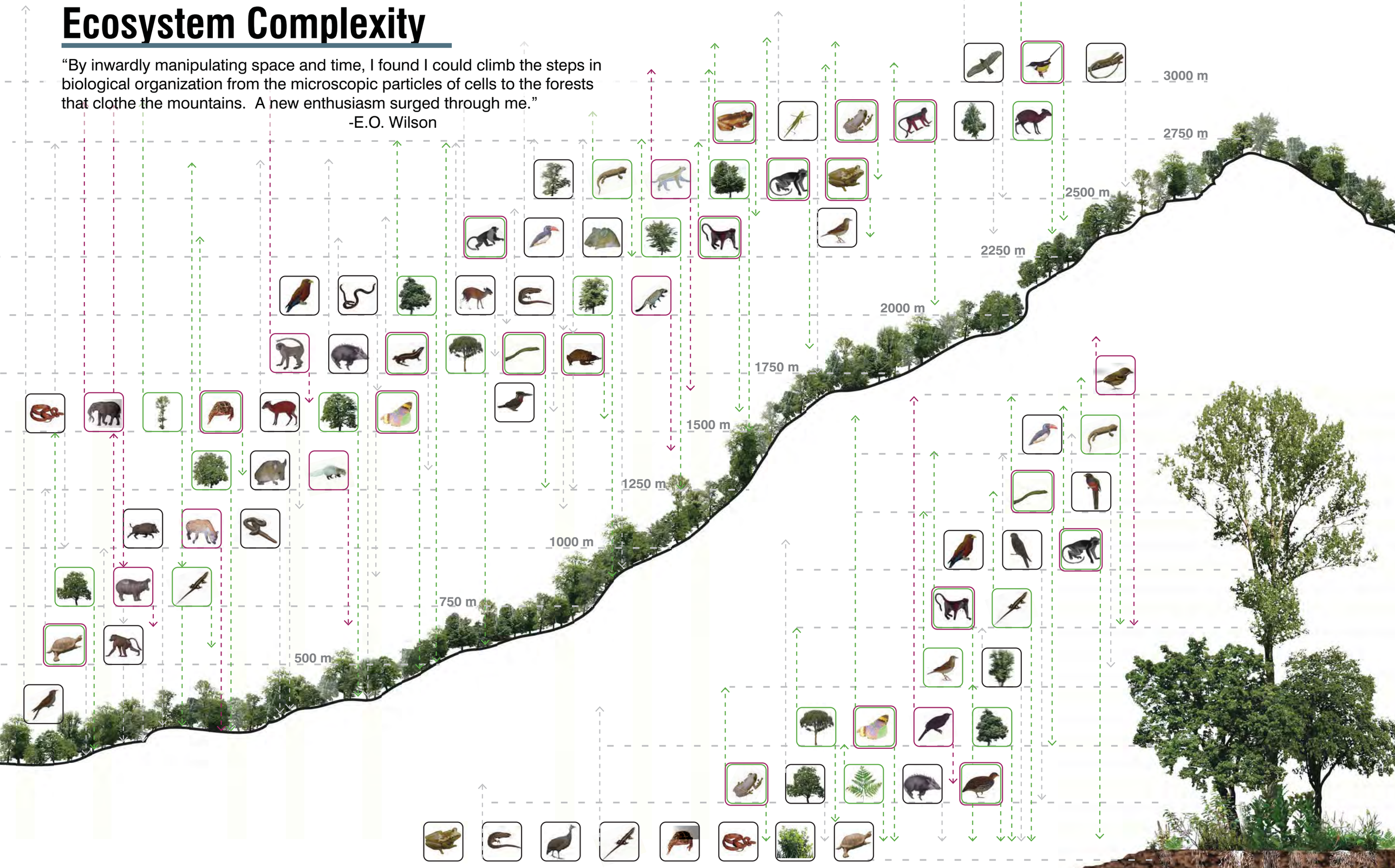


"While definitions can be useful, what is more important is the appropriateness and quality of action, not what it is called."
--WWF Guidelines for Community-Based Ecotourism Development

Ecosystem Complexity

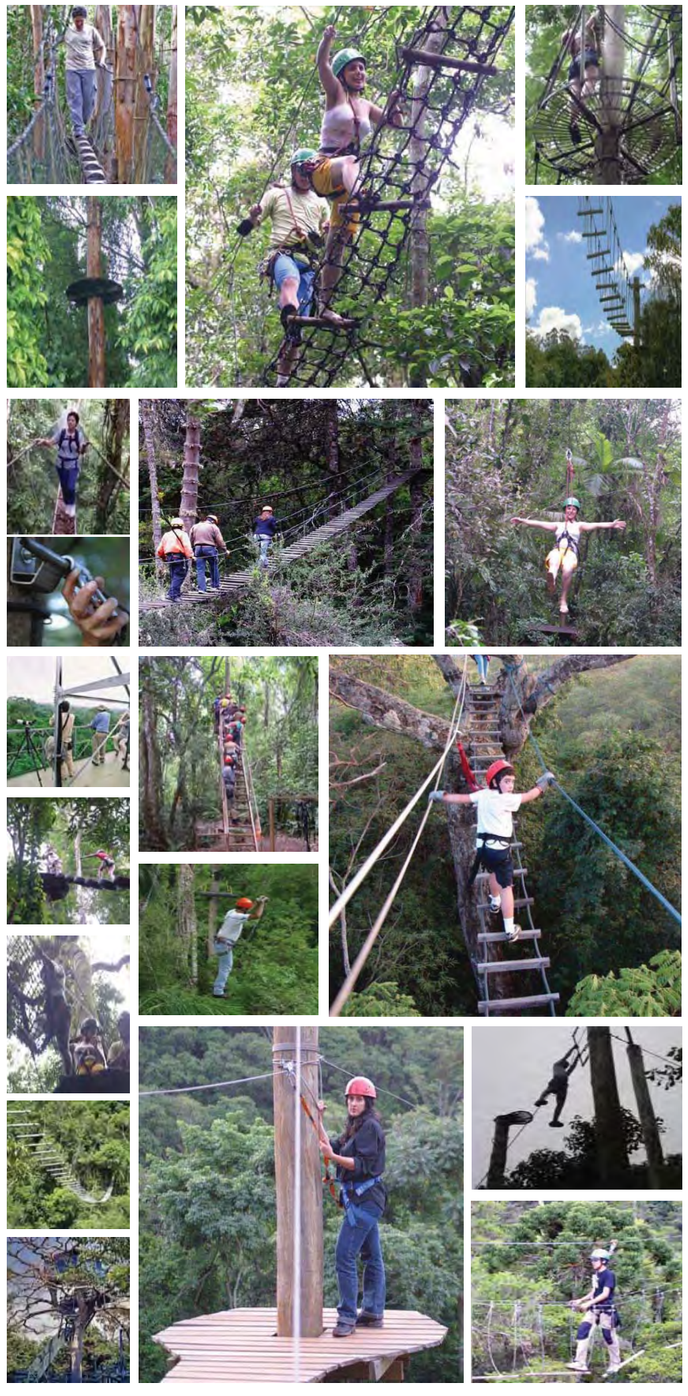
"By inwardly manipulating space and time, I found I could climb the steps in biological organization from the microscopic particles of cells to the forests that clothe the mountains. A new enthusiasm surged through me."

-E.O. Wilson



Canopy Walks: Brazil

Case Study



Key

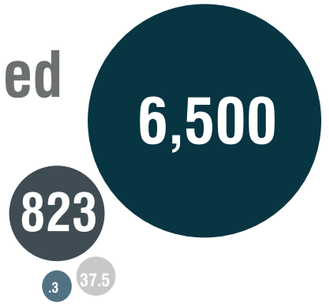
\#

Significant Value

Area Occupied

6,500

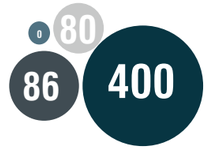
Size (ha.) of a Single Canopy Circuit



Admission Fee

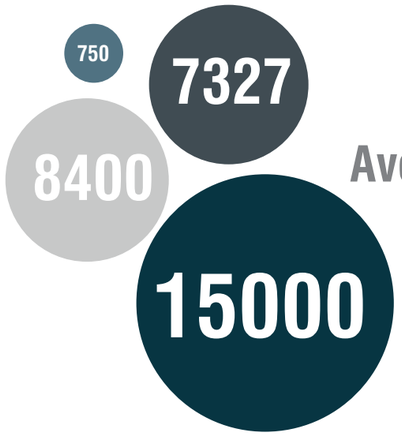
R $80

Average Admission Price



Visitors Per Year

7327

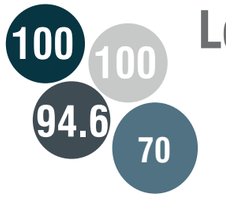


Average Number of Visitors/Year

Local Employment

94.6%

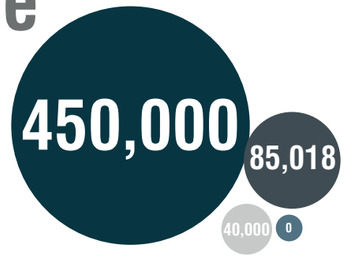
Average Percent of Local Employment



Annual Revenue

R $450,000

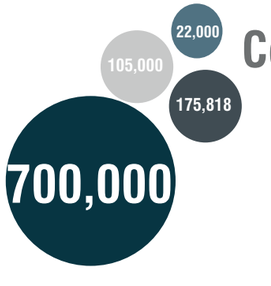
Revenue Made in 1 Year (R $)



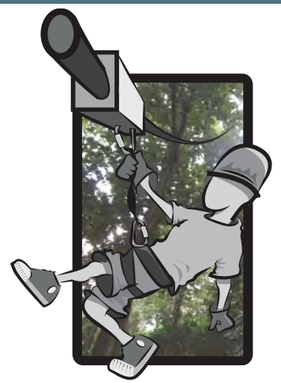
Cost of Construction

R $105,000

Median Cost of Construction



Canopy Activity Index

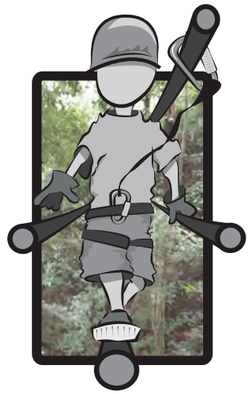


Zipline

Difficulty	●○○○○
Price	●●●○○
Adrenaline	●●●●●
Observation	●●●○○
Local Materials	●○○○○

Tire Bridge

Difficulty	●○○○○
Price	●○○○○
Adrenaline	●●●○○
Observation	●●●●●
Local Materials	●●●○○

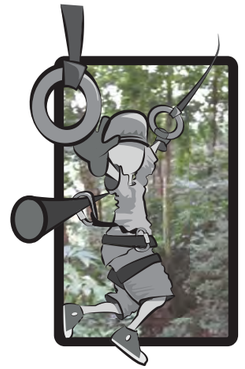


Cable Walkway

Difficulty	●●●●○
Price	●○○○○
Adrenaline	●●●○○
Observation	●●●●●
Local Materials	●●○○○

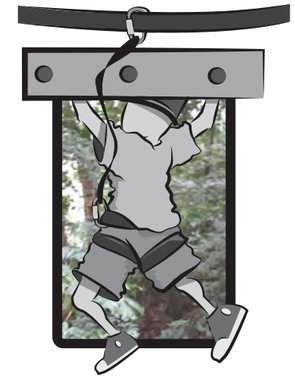
Tight Rope

Difficulty	●●●●●
Price	●○○○○
Adrenaline	●●●●○
Observation	●●○○○
Local Materials	●○○○○



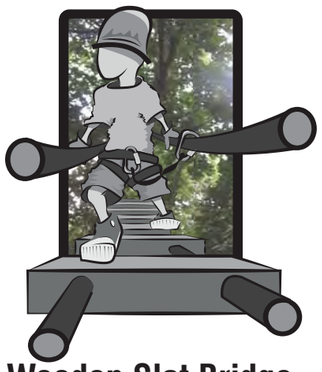
Swinging Monkey Bars

Difficulty	●●●●●
Price	●●●○○
Adrenaline	●●●●●
Observation	●○○○○
Local Materials	●●○○○



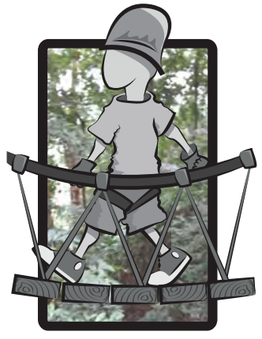
Stationary Monkey Bars

Difficulty	●●●●●
Price	●●●○○
Adrenaline	●●●●●
Observation	●○○○○
Local Materials	●●●●○



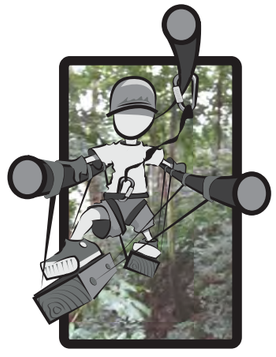
Wooden Slat Bridge

Difficulty	●●○○○
Price	●●●●○
Adrenaline	●●○○○
Observation	●●●●○
Local Materials	●●●●○



Suspension Bridge

Difficulty	●○○○○
Price	●●●●●
Adrenaline	●○○○○
Observation	●●●●●
Local Materials	●●●○○

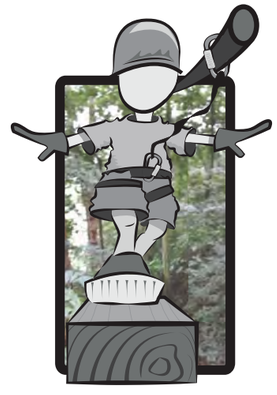


Fragmented Beam Bridge

Difficulty	●●○○○
Price	●●●○○
Adrenaline	●●○○○
Observation	●●○○○
Local Materials	●●●○○

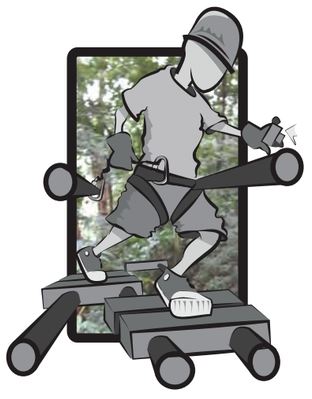
Cargo Net

Difficulty	●●●○○
Price	●●●●○
Adrenaline	●●●●○
Observation	●●●●○
Local Materials	●●○○○



Stationary Balance Beam

Difficulty	●●●●●
Price	●●○○○
Adrenaline	●●●●●
Observation	●○○○○
Local Materials	●●●●●



Alternating Slat Bridge

Difficulty	●●●○○
Price	●●●●○
Adrenaline	●●●○○
Observation	●●●●●
Local Materials	●●●○○

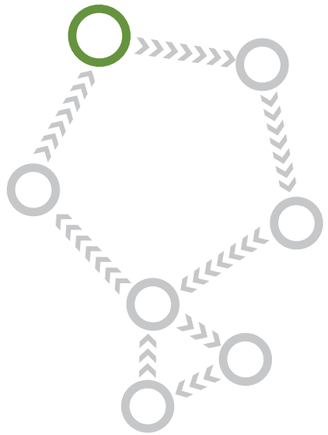
Canopy Walk Aerial

After careful consideration of the canopy walk catologue, we selected a variety of canopy walk features and assembled them into a circuit. The purpose of the presentation is to explore a hypothetical experience within the context of the Udzungwa Mountains National Park. The following images illustrate that experience.

Visitor Center

A new visitor center will orient guests to the park: what to look for, where to look, and a safety briefing for the canopy walk. The main purpose of the visitor center is to educate guests about the complexity and rich biodiversity of the Eastern Arc Mountains.

Visitor Center



1

PROS:
-provides environmental education for visitors
-shifts tourists gaze from “the big five” to a more well-rounded view of the forest ecosystem
-showcases scenic views of the mountainside
-utilizes local materials and labort
-provides venue for conferences, research, etc.

CONS:
-expensive to build
-high level of forest disturbance
-poor allocation of time and resources (visitor center already exists)

Pavillion & Suspension Bridge

An open-air pavillion provides the starting point to the canopy walk experience. Here, visitors are outfitted with the appropriate safety gear (helmets, harnesses etc.) as a guide briefs them on the inner-workings of the forest ecosystem. A suspension bridge utilizes the grade change to get visitors into the canopy and begin the course.

Pavillion + Suspension Bridge

2

PROS:
-Easily accessed from visitors center
-Provides staging area for canopy walk
-Universal accessibility for the suspension bridge and treehouse
-Eases visitors into the canopy walk experience

CONS:
-Not strictly necessary for a canopy walk
-High upfront costs
-Suspension bridge requires extensive engineering/outside consulting
-Highly site specific (dependant on grade change)

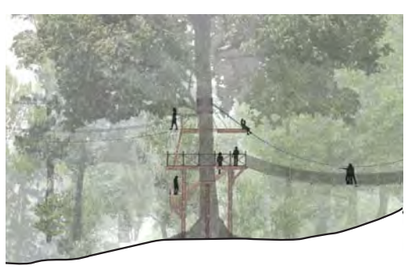
Tree House

The suspension bridge terminates at a multi-tiered tree house. The tree house is the best venue from which to observe wildlife. The canopy can still be experienced in this stable, comfortable structure for those who do not wish to pursue the more adrenaline-driven portions of the canopy walk.

Tree House

PROS:
-Stable, multi-tiered viewing platform
-Allows a variety of activities and universal access
-Highly marketable/ unique to Udzungwa
-Can be constructed almost entirely from local materials

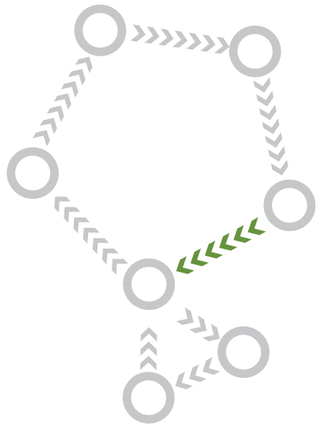
CONS:
-Cost prohibitive
-Requires outside engineering/consulting
-Requires a very large tree



Cable Walkway

The cable walkway is the first true element of the canopy walk. Visitors walk across a tightrope aided by two waist high cables for balance and support. It is not highly challenging, but visitors still get the feeling of walking on air.

Cable Walkway



4

PROS:
-Exciting but not particularly difficult first obstacle
-360 degree views of the canopy
-Relatively inexpensive and easy to build

CONS:
-Does not use any local materials
-Limited potential for forest observation

Adventure Circuit

Not for the feint of heart. The adventure circuit provides an optional tangent for the adrenaline junkie. Users have the choice of testing their mettle on the swinging monkey bars, a balance beam, or a tightrope walk, all while the harness guarantees safety and peace of mind.

Adventure Circuit

PROS:
-Generates a high level of excitement
-Physically challenging
-Targets young and adventuresome crowd
-Enormous amounts of fun
-Very memorable experience/ feeling of accomplishment

CONS:
-Targets a niche market
-Too much fun
-Potential for injury
-Less focus on wildlife and environmental education
-May be overtaken by a pack of monkeys
-Exceeds recommended daily allowances of fun

Cargo Net Web

The cargo net web is an entirely enclosed structure and can be used for observation or play. Unlike other obstacles, it is not a bridge for forward movement but a destination in and of itself. Users can walk, climb, crawl, or lounge.

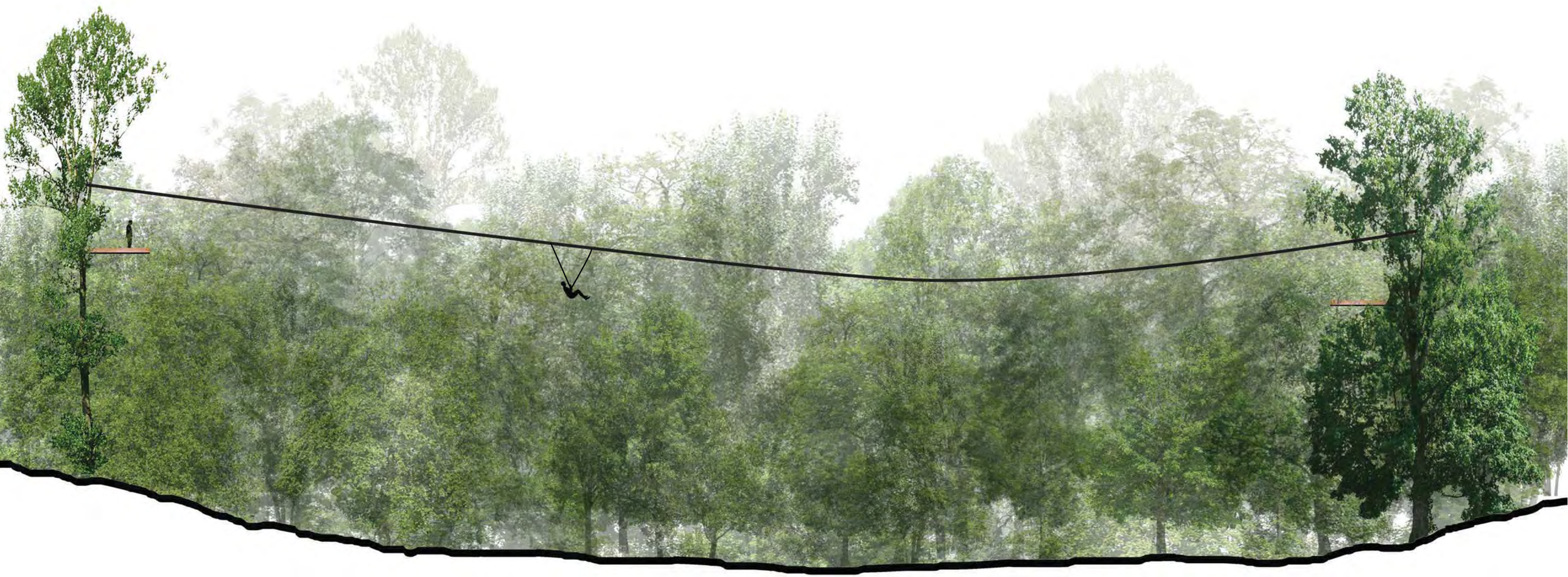
Cargo Net Web

PROS:
-No safety harness is required inside the web
-Self-contained and allows for 360 degree views of the forest
-Appeals to a wide range of users
-Acts as a destination/ meeting point

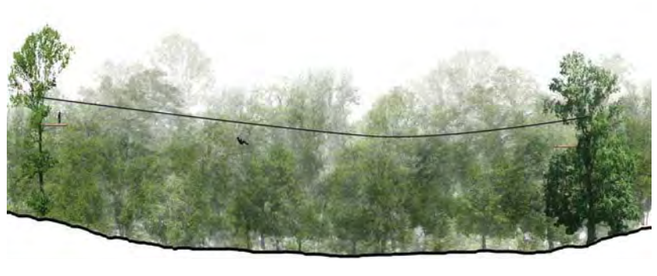
CONS:
-Very large, custom-built structure
-Requires a lot of maintenance

Zipline

The zipline is the culmination of the entire canopy walk. It can either lead to another platform or directly to the forest floor. It is not physically demanding but users still get an enjoyable adrenaline kick as they zoom through the forest canopy.



Zipline



PROS:
-Provides an adrenaline rush without any degree of difficulty
-Relatively cheap and easy to build/maintain
-Allows users to cover a lot of ground without hiking

CONS:
-May not appeal to all users
-May require other trees to be trimmed or removed
-No local materials used
-Could be considered an eyesore

Implementation Phase 1

Suspension Bridge + Treehouse Platform

Implementation Phase 2

Pavillion + Treehouse Explansion

Implementation Phase 3

Visitors Center

Implementation Phase 4

Cable Walkway + Cargo Net Web + Zipline

Implementation Phase 5

Adventure Circuit

5

CONCLUSIONS + RECOMMENDATIONS

Promote Udzungwa as a Tourist Location

-market the forest and its rich biodiveristy
-shift visitors attention from “the big five” to forest complexity with informative visitor center installations
-create attractions that other Tanzanian National Parks cannot emulate i.e. treehouse & canopy walk

Design Experiences + Tours that Showcase the Forest

-get visitors into all levels of forest strata
-carefully consider placement of canopy platforms and obstacles to allow for observation
-point out as many species to visitors as possible, not just monkeys
-juxtapose small and large forest elements so visitors begin to grasp interconnectedness of forest ecosystems

Utilize Phased Implementation

-implement some portion of a canopy walk as soon as possible to begin generating income
-seek funding for parts rather than the entire project
-design in circuits to maximize efficiency

Create a Wide Range of Obstacle Types

-make the canopy walk appealing to users of varying physical capabilities
-design both observation- and adrenaline-based elements

Involve the community

-utilize local labor and materials wherever possible to reduce costs and stimulate the economy
-employ locals whenever possible so they see direct benefits from the park
-provide the catalyst for community-based tourism expansion

REFERENCES

Bonilla, J. Carlos, 1997. Participatory Ecotourism Planning. Conservation International Foundation.

Bukenya, J. Obadiah, 2011. Application of GIS in Ecotourism Development Decisions. Evidence from the Pearl of Africa. West Virginia University, Morgantown, WV.

Denman, R., 2001. Guidelines for Community-Based Ecotourism Development. WWF International, Gland, Switzerland.

Ecotourism Guidelines, 1993. The Ecotourism Society, North Bennington, Vermont.

Environmental Grantmakers Association, Ecotourism as a Conservation Strategy for Funders, 2008. New York, New York.

Flora and Fauna Protection Area: Best Ecotourism Practices, Mexico.

Honey, M., 2008. Ecotourism and Sustainable Development. Island Press, Washington, DC.

Inman, C., Impacts on Developing Countries of Changing Production and Consumption Patterns in Developed Countries: The Case of Ecotourism in Costa Rica. INCAE, Costa Rica.

Khanal, R. Bhoj and Jan Tahir Babar, 2007. Community Based Ecotourism for Sustainable Tourism Development in the Mekong Region. Hanoi Resource Center, Hanoi, Vietnam.

Kiss, A., 2004. Is Community-Based Ecotourism a Good Use of Biodiversity Conservation Funds? Trends in Ecology and Evolution 19:232-237.

Loibooki, B., n.d. The Role of Tanzania National Parks in Ecotourism. Ms (PowerPoint Presentation).

McDill, M., 1999. Prmoting ecotourism on Private Lands. Northeast Regional Center for Rural Development, The Pennsylvania State University, University Park, PA.

Nobre, I., 2007. Canopy Ecotourism Study. Global Canopy Program, Brazil.

Ross, S., 1999. Ecotourism: towards congruence between theory and practice. University of Waterloo, Ontario, Canada.

Rubinstein, W., Ecotourism, Policy and Practice: Including a Case Study from the Maya Forest. University of Florida, Gainesville, Florida.

Thampi, S., 2005. Ecotourism in Kerala, India: Lessons from the Eco-Development Project in Periyar Tiger Reserve. University of Calicut, Kerala, India.

TIES Global Ecotourism Fact Sheet, 2005. The International Ecotourism Society, Washington, DC.

Wood, M., Epler, 2002. Ecotourism: Principles, Practices & Policies for Sustainability. United Nations Environment Program, Paris, France.

World Ecotourism Summit, 2002. Final Report. World Tourism Organization and the United Nations Environment Programme, Madrid, Spain.