

# COMMITTING TO NET GAIN IN THE COLOMBIAN HIGH MOUNTAIN ECOSYSTEMS



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# WHAT IS BETTER THAN COLOMBIAN COFFEE?...



National proud



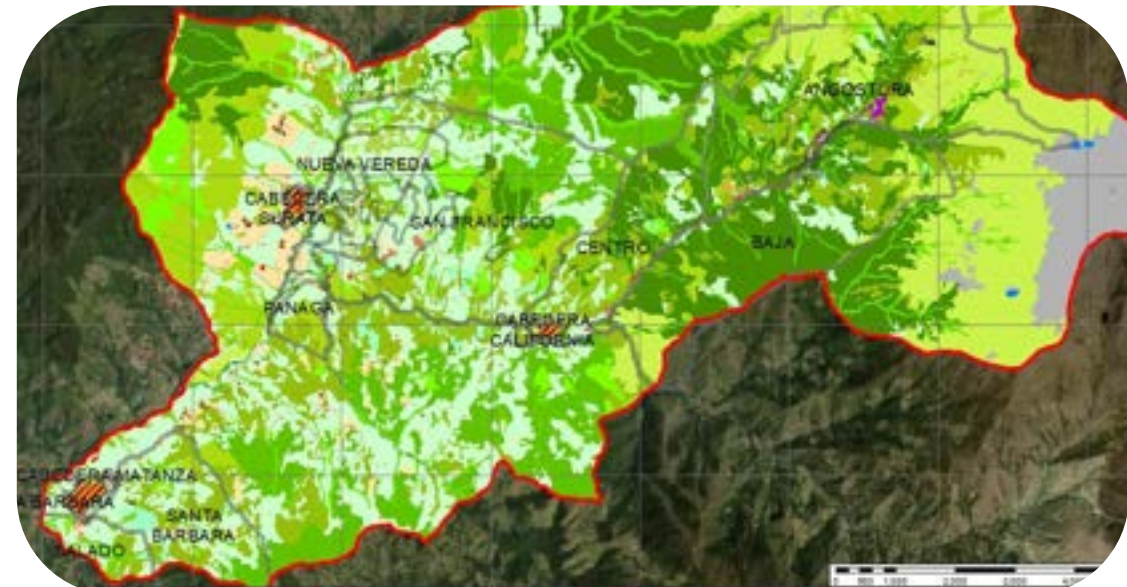
- Population and Economics above 1.700 masl (up to 3000 +)
- Páramo is a protected ecosystem “páramos are water factories”
- Biodiversity **vs** Ecosystem Services **vs** Infrastructure

...COFFEE AT THE COLOMBIAN HIGH MOUNTAINS

# FROM BIODIVERSITY AND COMPENSATION (OFF-SET) TO NET GAIN

Biotic Compensation Plan Based on Land Covers and Ecosystems:

- How Much?: x C. Factor
- Where?: proximity
- How?: options



# EVOLUTION THROUGH OPPORTUNITY...APPLIED CASE OF A MINING PROJECT

2017

- Vegetation cover analysis
- Multitemporal analysis (veg. cover changes)
- Associated Fauna (implicit)
- Landscape (patch analysis)
- Basic Connectivity analysis
- Scenarios (2): Base Line + w/Project
- Off-Set: Comp. Factor and “somewhere nearby” (TBD)

2019

- Habitat (quality) models
- ID Fauna Nodes and Corridors
- Ecological Integrity Análisis
- Functional Connectivity with 2 Species
- Scenarios (3): Base Line + w/Project + w/off-set
- Off-Set: Comp Factor and specific spots

2023

- Fragmentation Analysis (landscape, anthropic activities, habitat condition)
- Ecological Integrity Analysis (in depth)
- Functional and Structural connectivity Analysis (corridors and connectivity indexes with selected species)
- Pin-point location for compensation and off-sets
- Scenarios (4): Past + Base Line + w/Project + w/off-set



COMPENSATION AND OFF-SET



NET GAIN

## THE CHALLENGE



From Land  
Cover to  
Biodiversity

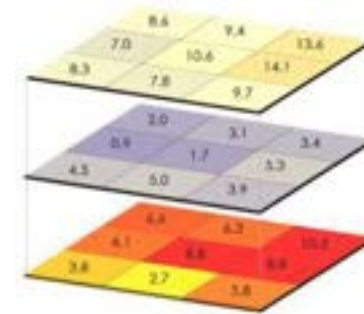
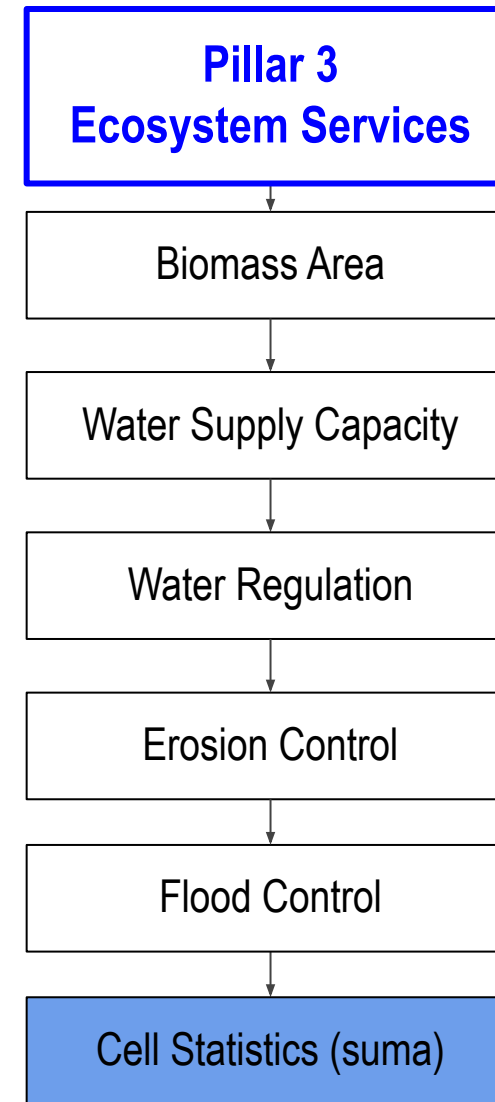
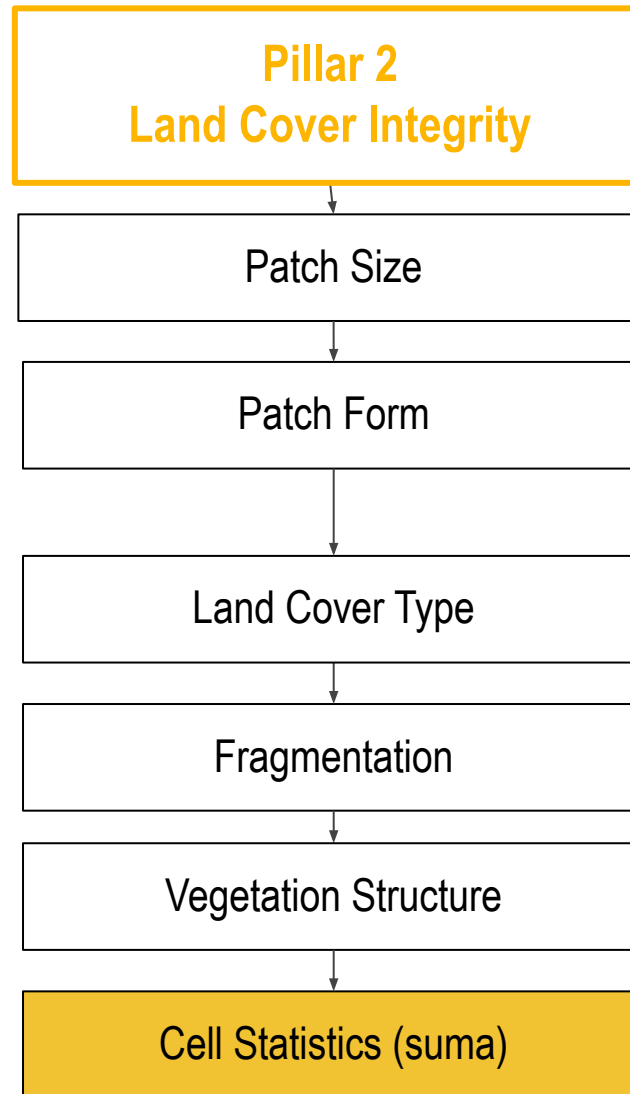
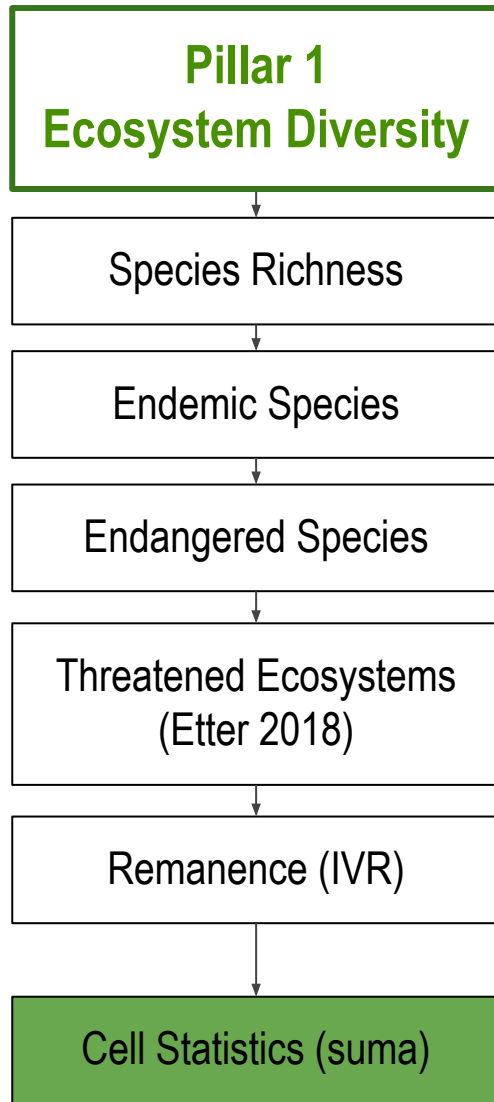


## THE KEY



Quality over  
Quantity

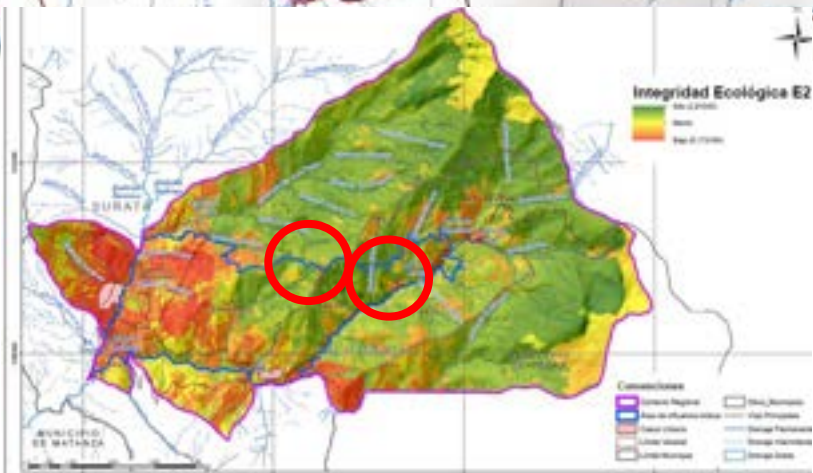
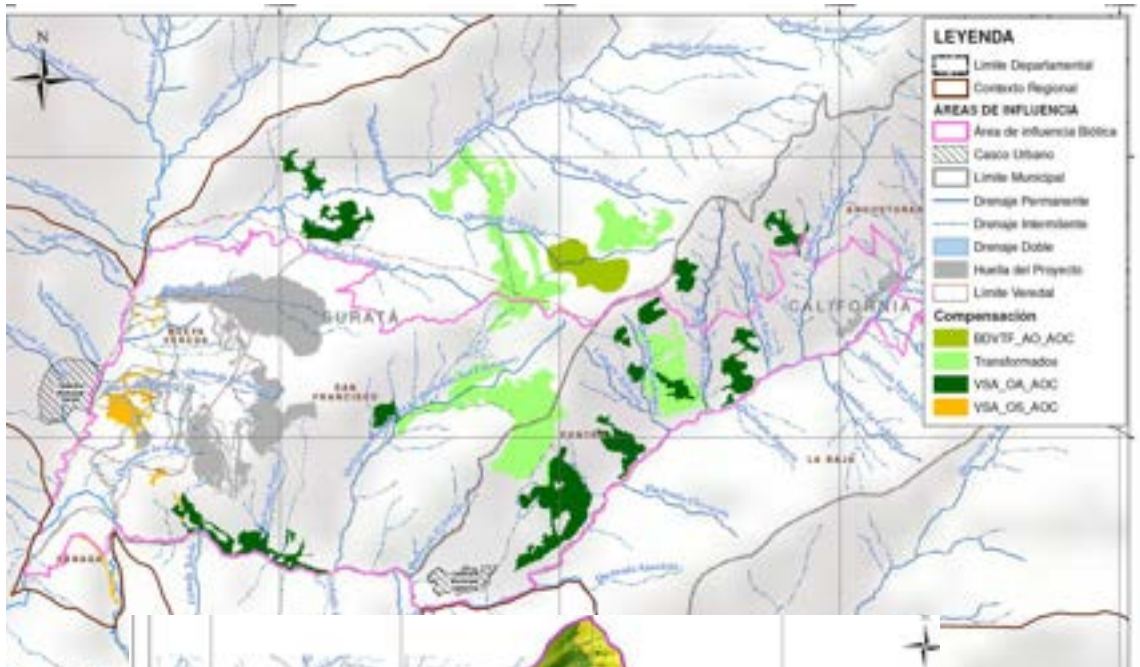
# Measuring Biodiversity - Ecological Integrity



ECOLOGICAL  
INTEGRITY

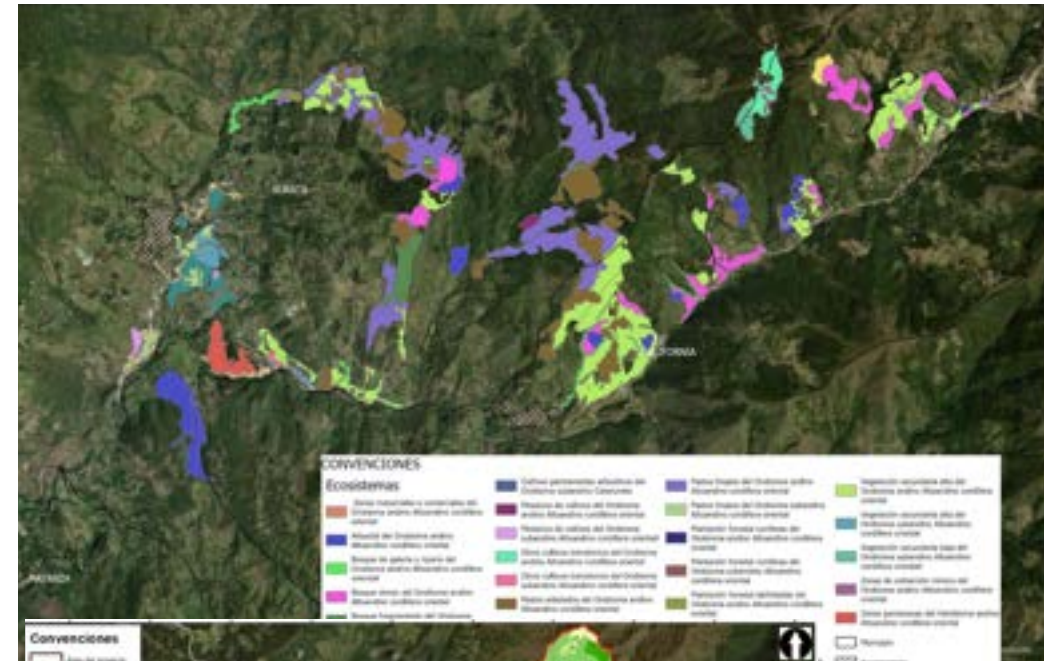
# "Invest" in Offset... the Best Bang for the Buck

2017 - 240 ha



Good

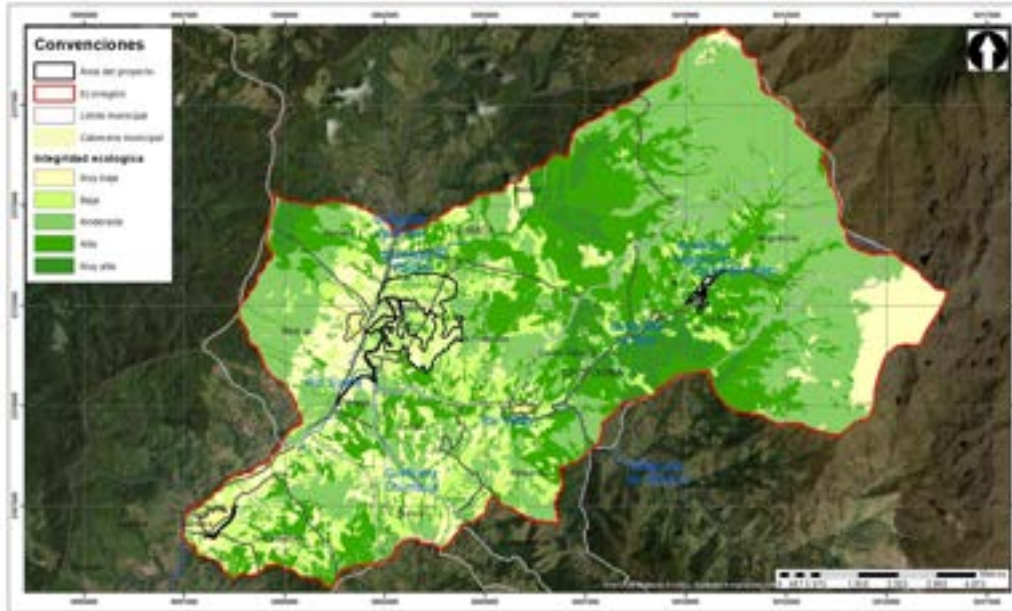
2023 - 340 ha



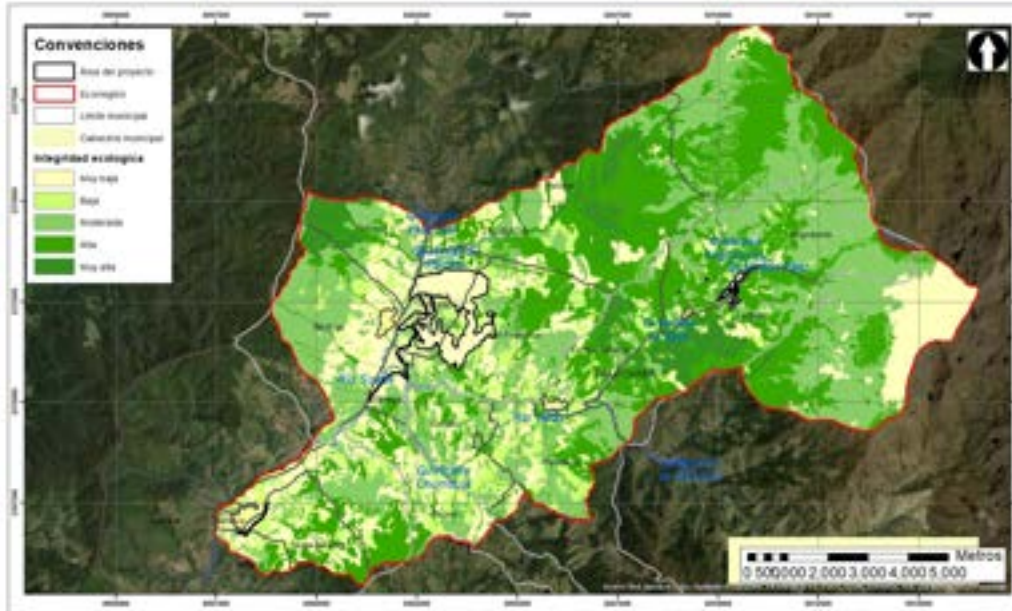
Effective and Strategic

# ECOLOGICAL INTEGRITY RESULTS - 2023

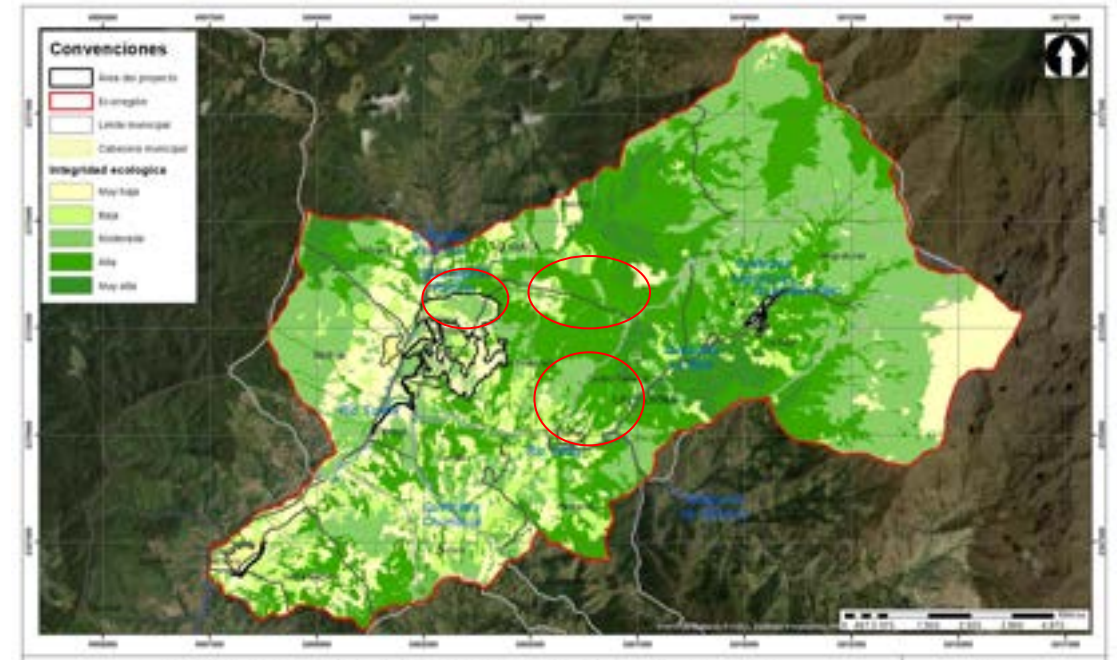
Base Line



With Project



With Project plus Compensation and Offset



- Project impact did not reach Páramo
- 340 ha that had a positive effect on over 10.000 ha



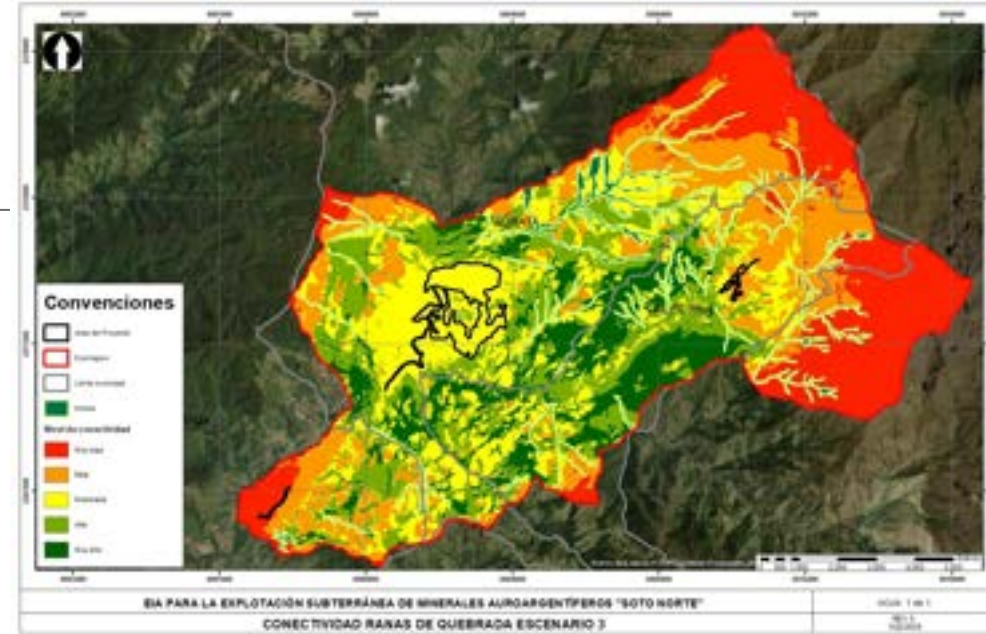
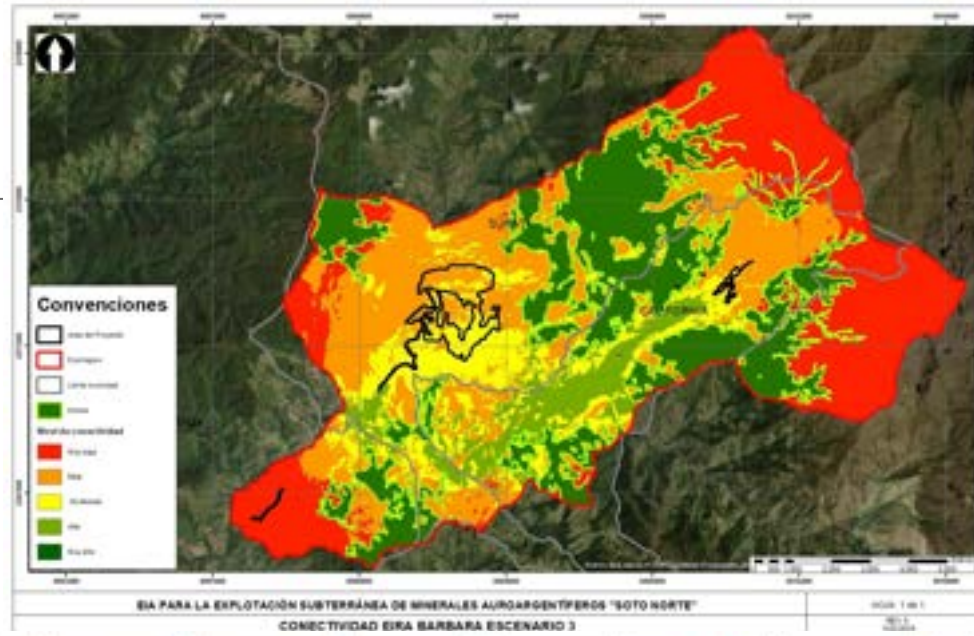


# From Corridors to Understanding Connectivity

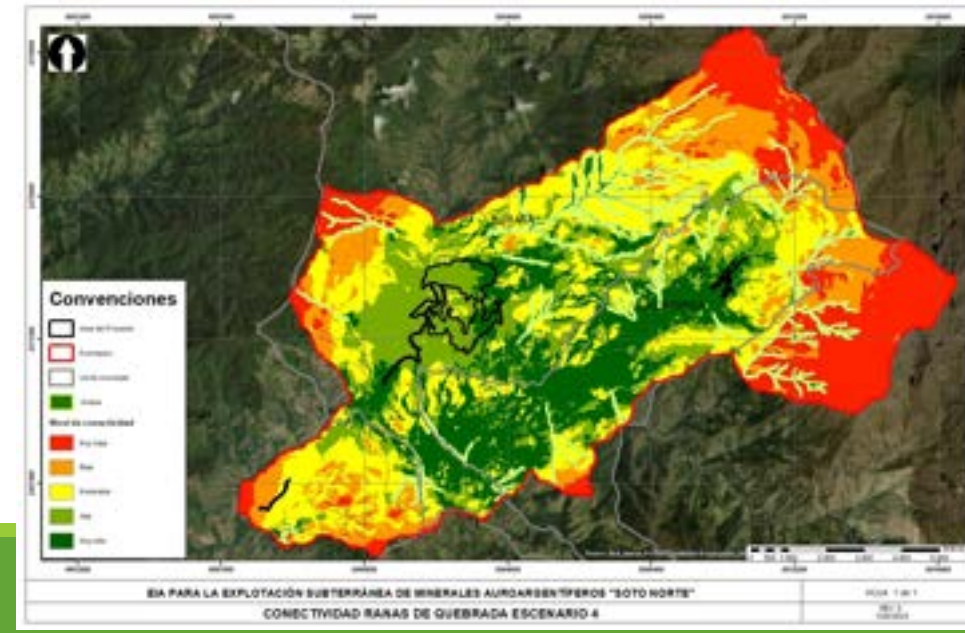
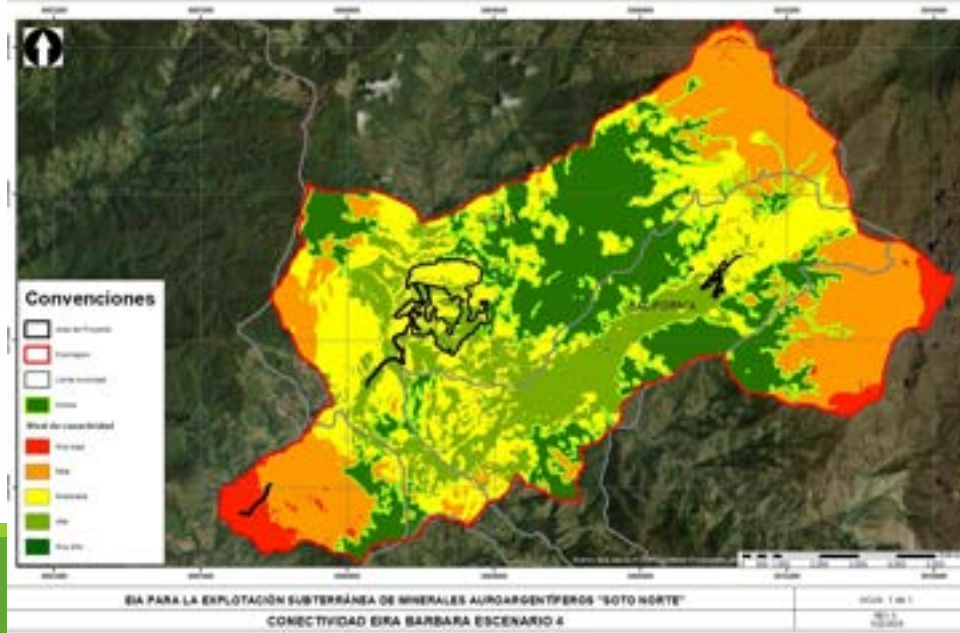
## Regional Connectivity (Collarejo Fox)

## Regional Connectivity (Creek Frog)

With Project



With Project After Compensation and off-set



## HIGHLIGHTS



## CHALLENGES

- Applied Mitigation Hierarchy (avoid and prevent impacts)
- Better understanding of territory and impacts = effective solutions and more benefits (NET GAIN)
- Provides options (vs available location of offsets)
- Time effective solution
- Integrated model allows for integrated solutions
- Measurable BNG

- “Convince” others
- Higher baseline efforts (in depth and area)
- Surpass “Area of Influence” concept in IA (3.000 ha vs 11.000 ha)
- Specific understanding of key local species
- Further understanding of key Ecological Integrity
- Model calibration with assessment during implementation - fine tune
- Insist in overall benefit

# Let's continue the conversation!

Post questions and comments in the IAIA24 app.



## #iaia24

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