

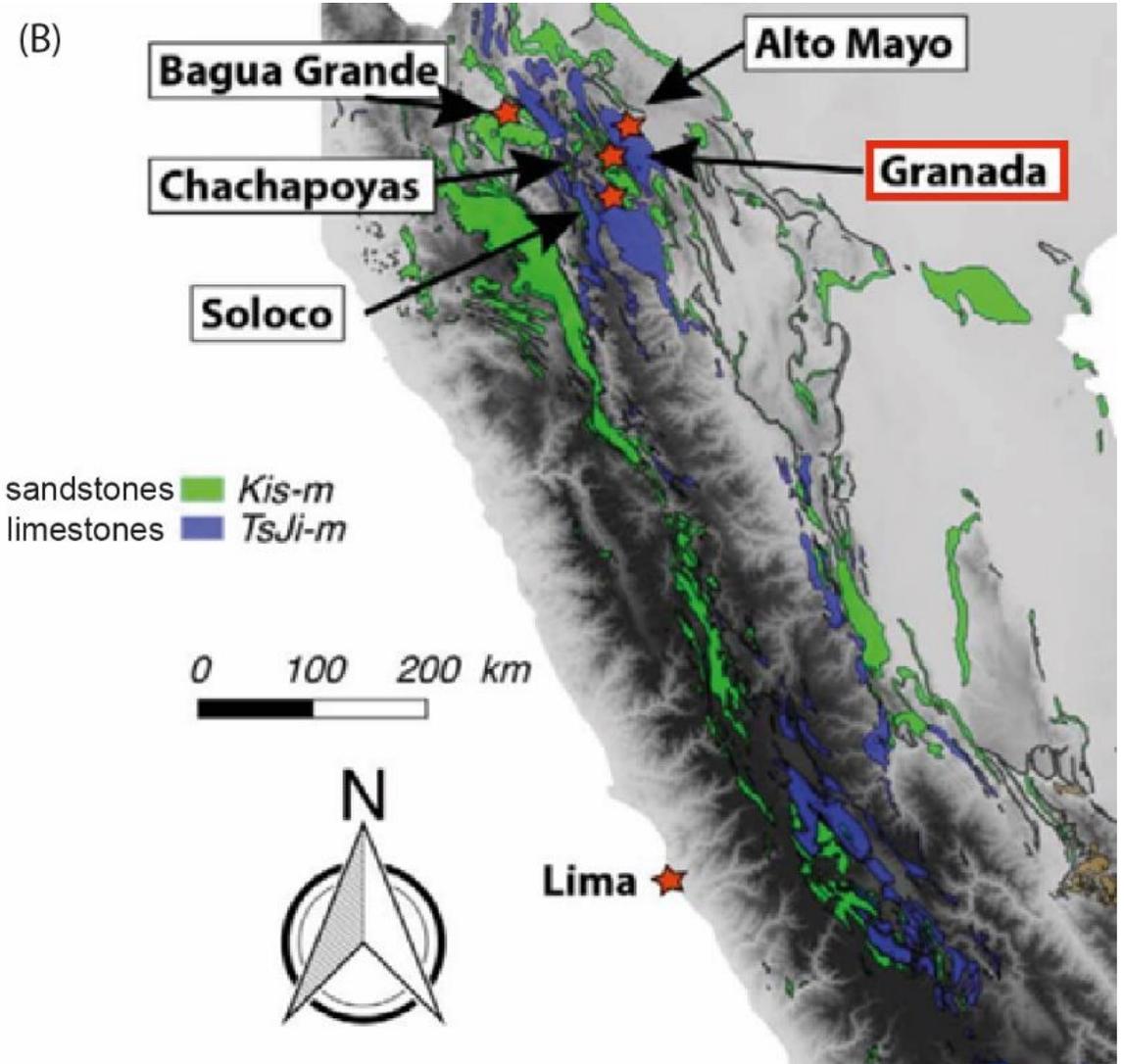


# Picos de Oro Expedition, Northern Peru, 2023, 2024

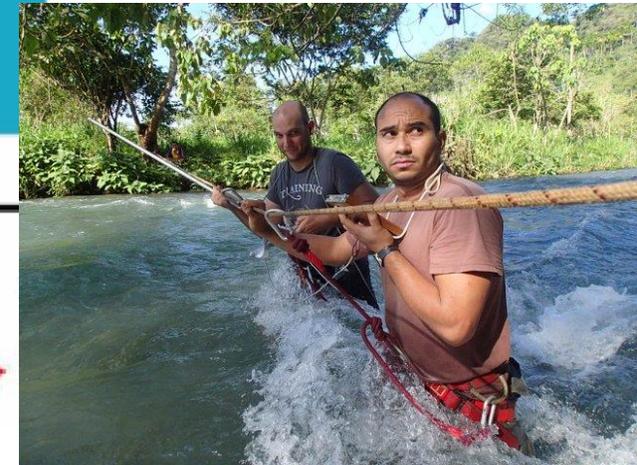
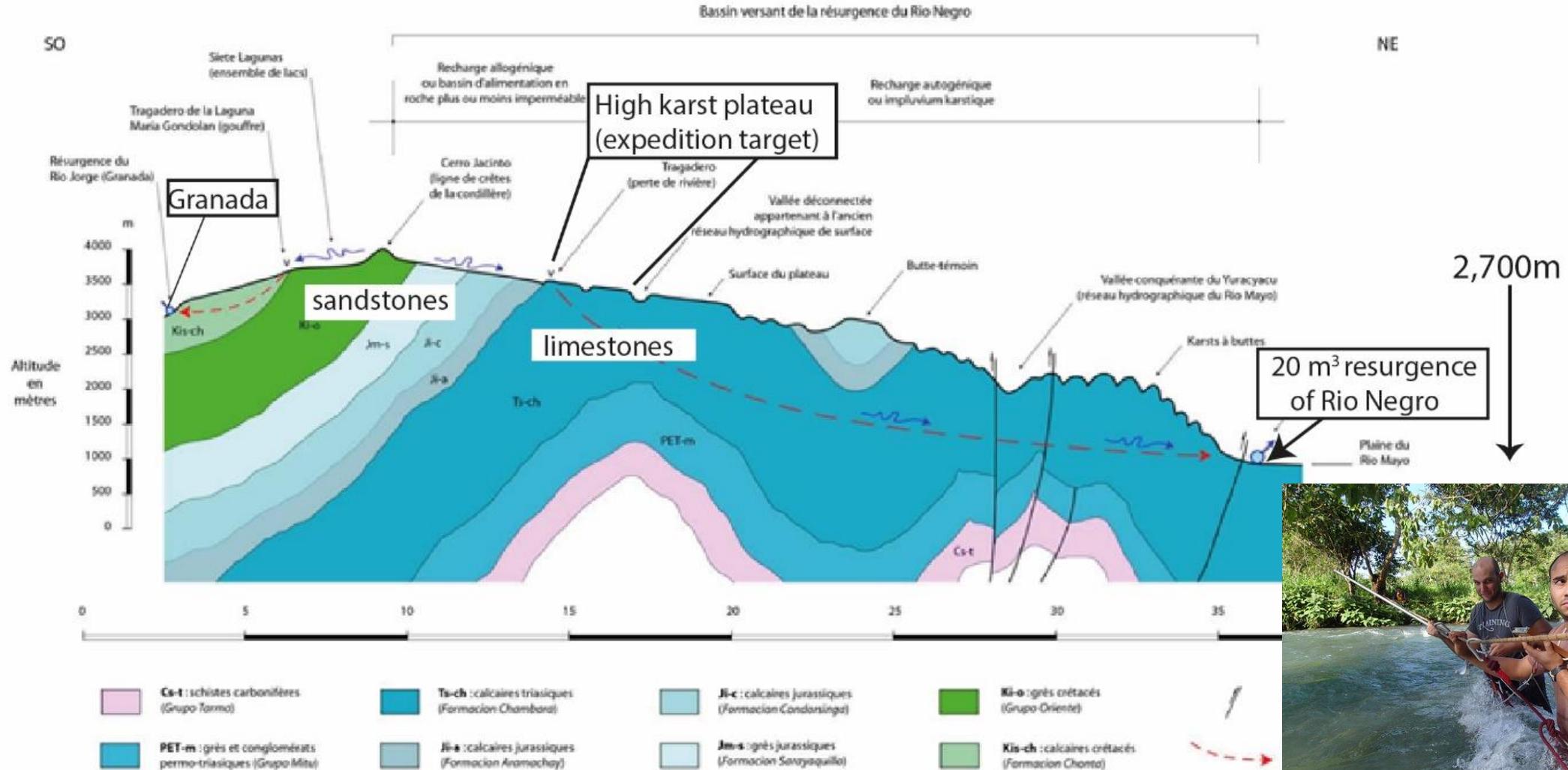
Dominik FROHLICH and the « Pico del Oro Expedition Group »

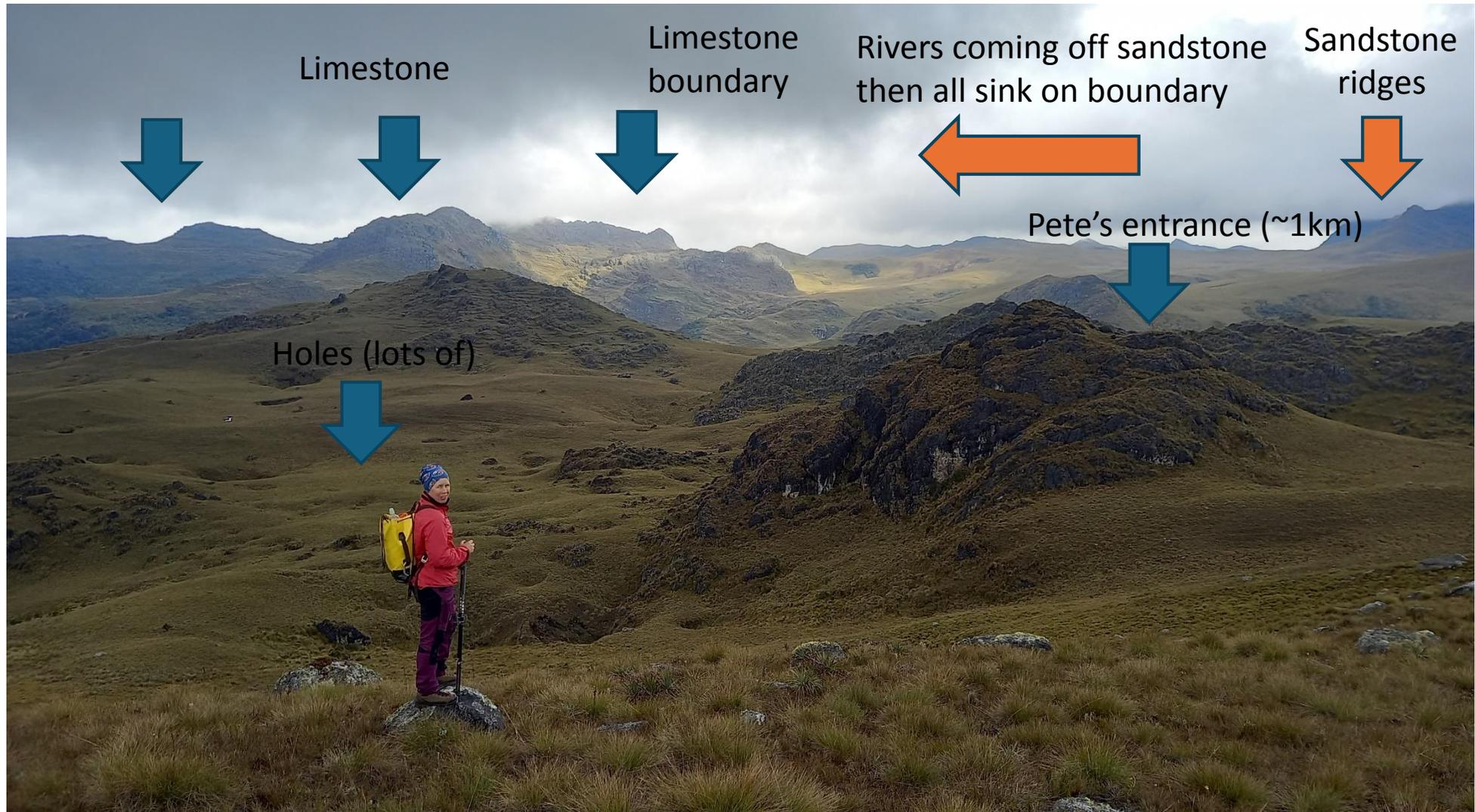


# Pico de Oro Plateau - Northern Peru



# World Class: 2,700m of vertical relief, and 25-28 km sideways, to a 25-34m<sup>3</sup> resurgence





2022: Great Karst : But we were very ill!

# 2023 Expedition Sets Out in Optimism ...with a different strategy



And... 50kg of dehydrated meals, and 30kg of artisan granola (...and Milo!)

Pete Talling (UK)

José Antonio De Pomar Cáceres (Perú, ECA)

Gareth Davies (UK)

Chris Densham (UK)

Dominik Frohlich (Germany)

Mike Futrell (USA)

Rene Haemers (Netherlands)

Martin Holroyd (UK)

Andreas Klocker (Austria)

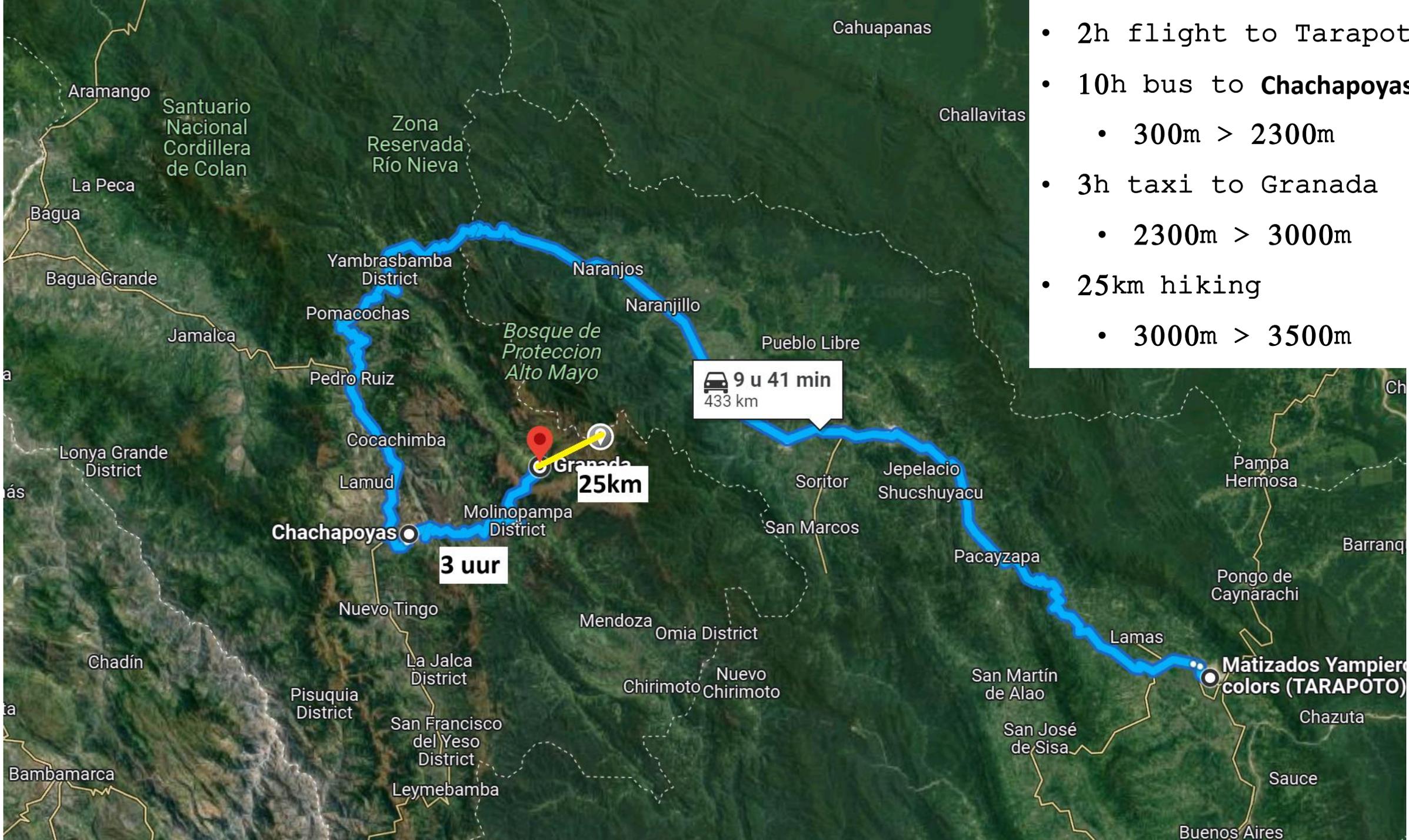
Boaz Langford (Israel)





With a large set of thanks to Liz Hidalgo (Perú - LH), Jean Loup Guyot (France), Jean-Yves Bigot (France) and Oliver Fabre (France) for helping to organise many aspects of logistic that include local permissions, horses and local guides in Granada, group travel, and equipment storage.

We also extend a very large set of thanks to Dario Labajos Conilla, Lorenzo Gebol Gomez, and Rosa Auristela Labajos, and Gilberto Gebol Gomez and others from Granada, who organised logistics, and provided food and the horses that carried much of the equipment onto the high plateau.



- 2h flight to Tarapoto
- 10h bus to **Chachapoyas**
  - 300m > 2300m
- 3h taxi to Granada
  - 2300m > 3000m
- 25km hiking
  - 3000m > 3500m

# Chachapoyas











# Equipment

- Personal camping gear (incl tent/thick sleeping bag/thick jacket)
- Personal cave gear
- Food for 10p for 2.5 weeks
- 4x benzincookers
- 600m of rope
- Rigging gear, 80x carabiners, 80x pegs, 60x plates, 10x Petzl pulses, 20x slings
- 1x generator
- 30l gasoline
- 4x drills+extra batteries
- 4x hammers
- 5-6x solar panels
- 5-6x water filters
- 1x extensive first aid
- 3x satellite phones
- 4x distoX2's
- 4x tarp
- 10x caving bags...

**~400 to 500kg**



Drive from Chachapoyas to Granada

# Granada











Hike from Granada to expedition area





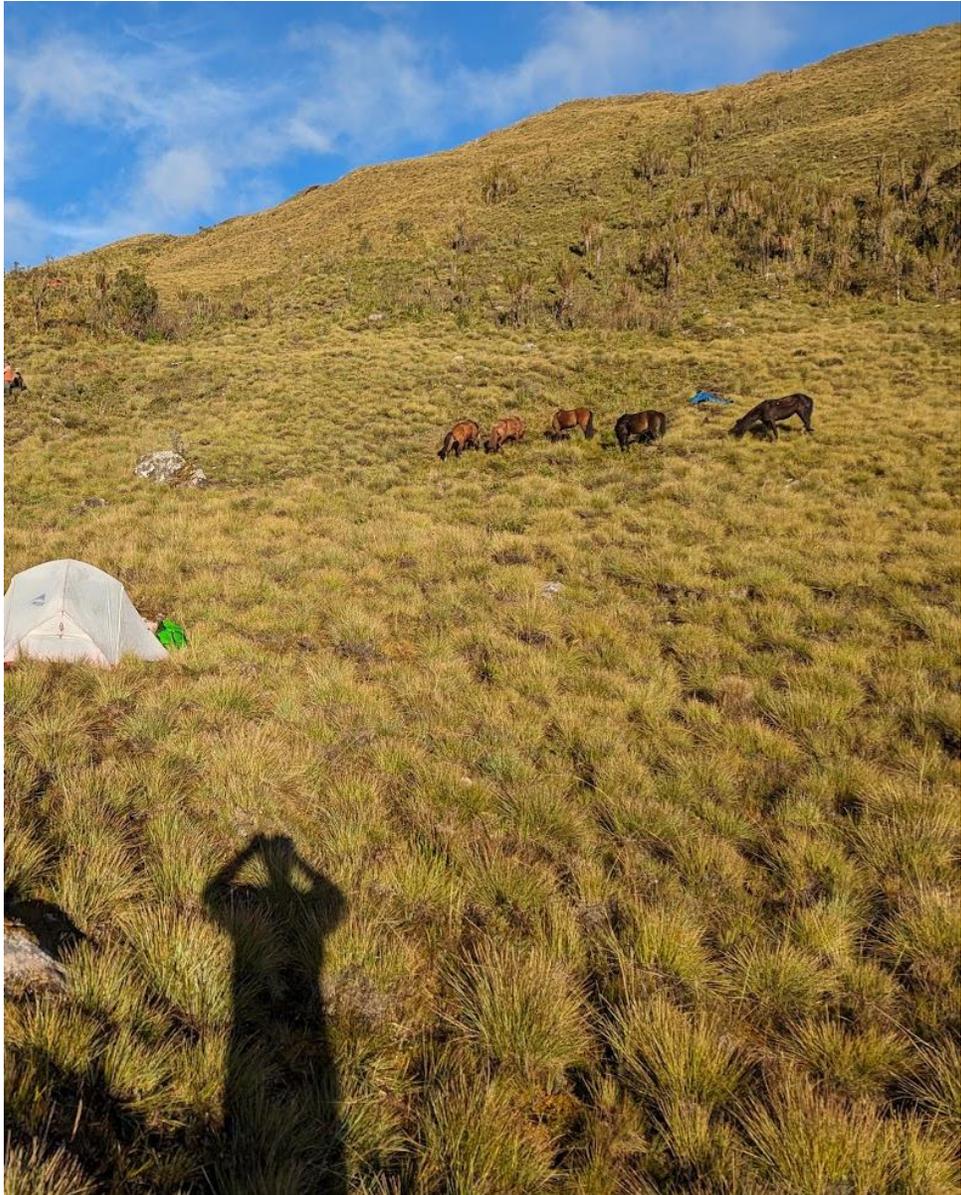


Horses are not made for swamps and heavy load

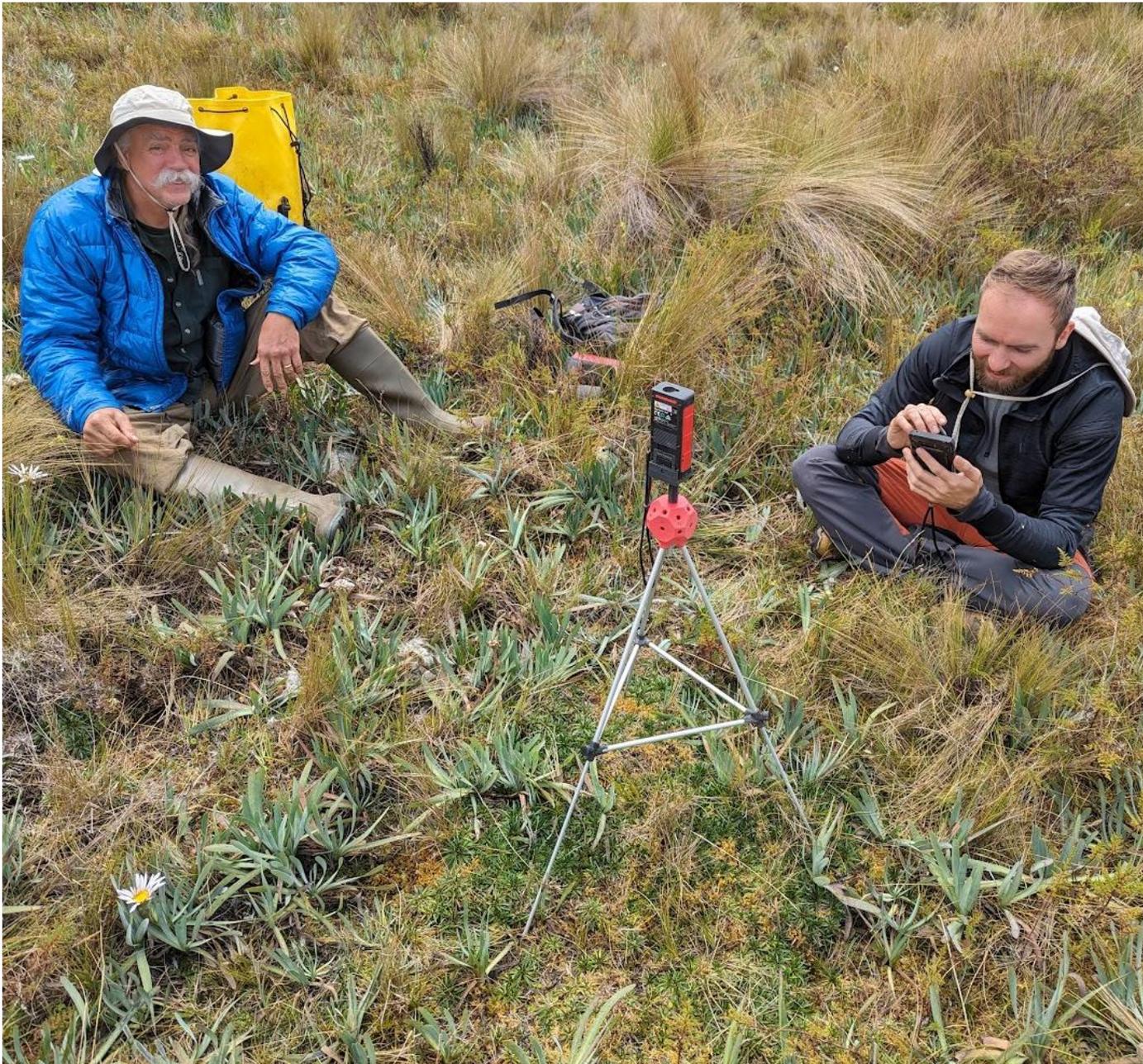




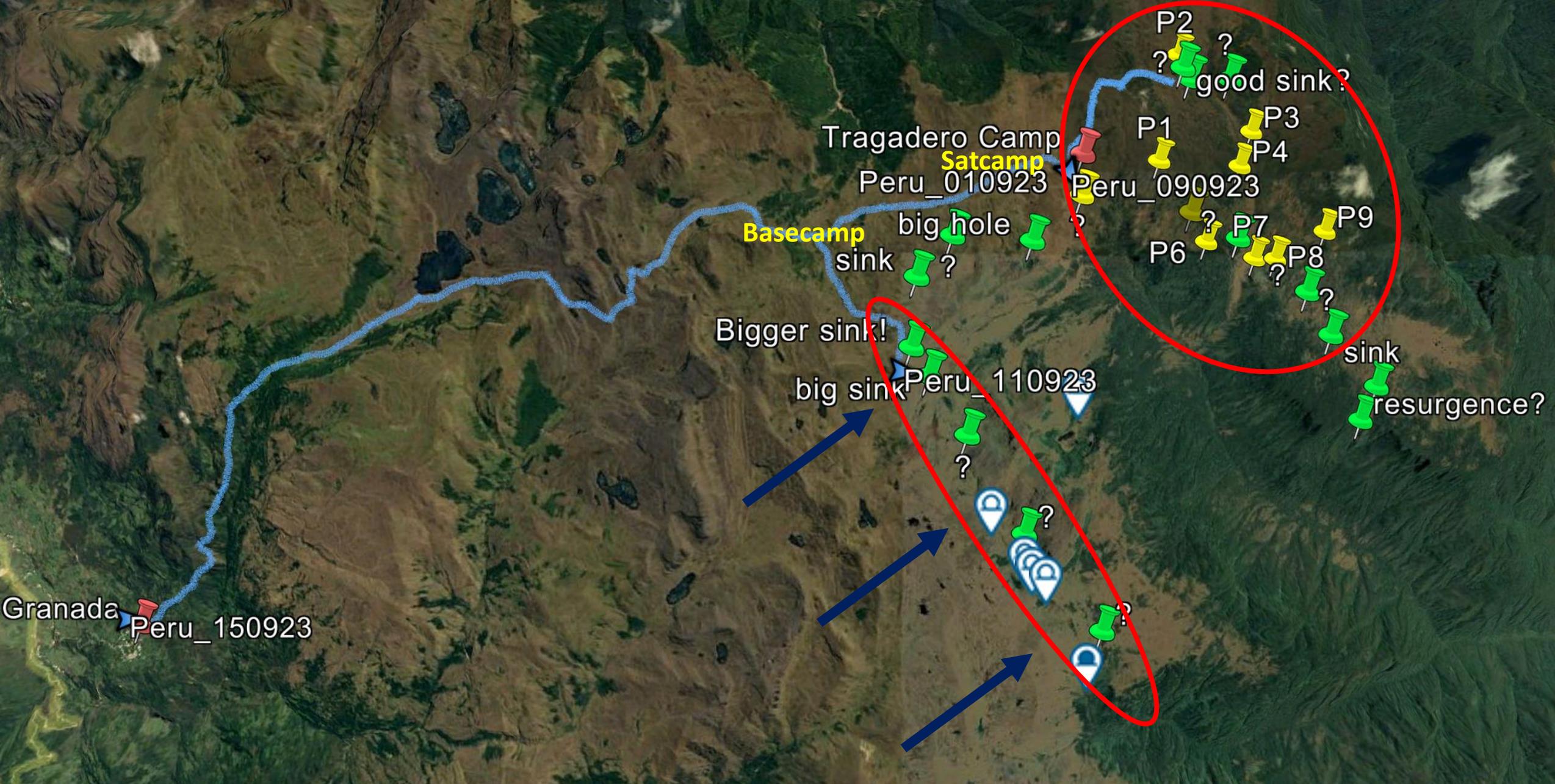




Finally arrival at the base camp area, with a slope



Work continues, calibration of Distos and separation of Ropes



Expedition splits into 2 teams to explore east and west area



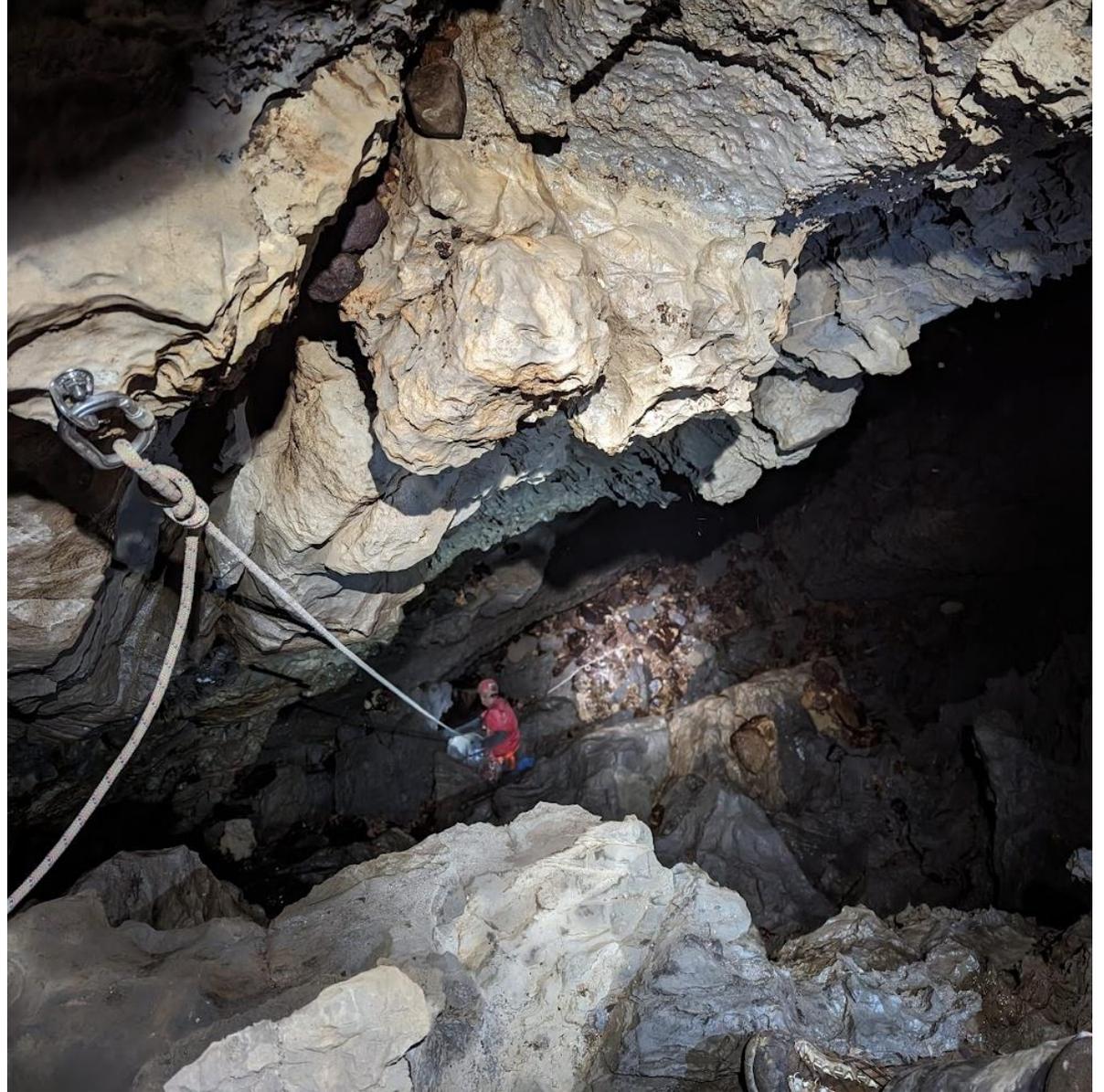
East area



Entrance to Tragadero de la Soledad













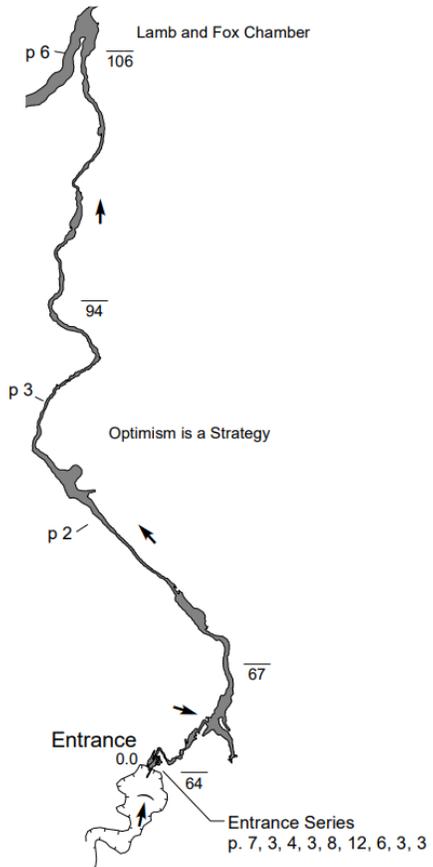


# Tragadero de la Soledad

Vista Alegre, Rodriguez de Mendoza, Amazonas, Pe

Length: 2345 m  
Depth: -205 m  
-6.06477, -77.51528, 3420m

- Stream
- ▬ Passage
- 94 Depth below Entrance
- p 6 Pitch Depth



Surveyed Sept. 2-13, 2023  
by international team:  
Antonio De Pomar Cáceres (PE)  
Gareth Davies (GB)  
Chris Densham (GB)  
Dominik Fröhlich (DE)  
Mike Futrell (US)  
René Haemers (NL)  
Martin Holroyd (GB)  
Andreas Klocker (AT)  
Boaz Langford (IL)  
Pete Talling (GB)

MF



Very happy team 1 after the first days of survey and discovery of a large chamber with another river and continuation



Hike to satellite camp in west area, ice on tents after night



Flat terrain can get very swampy



Entrance to Lorenzo's Left Eye







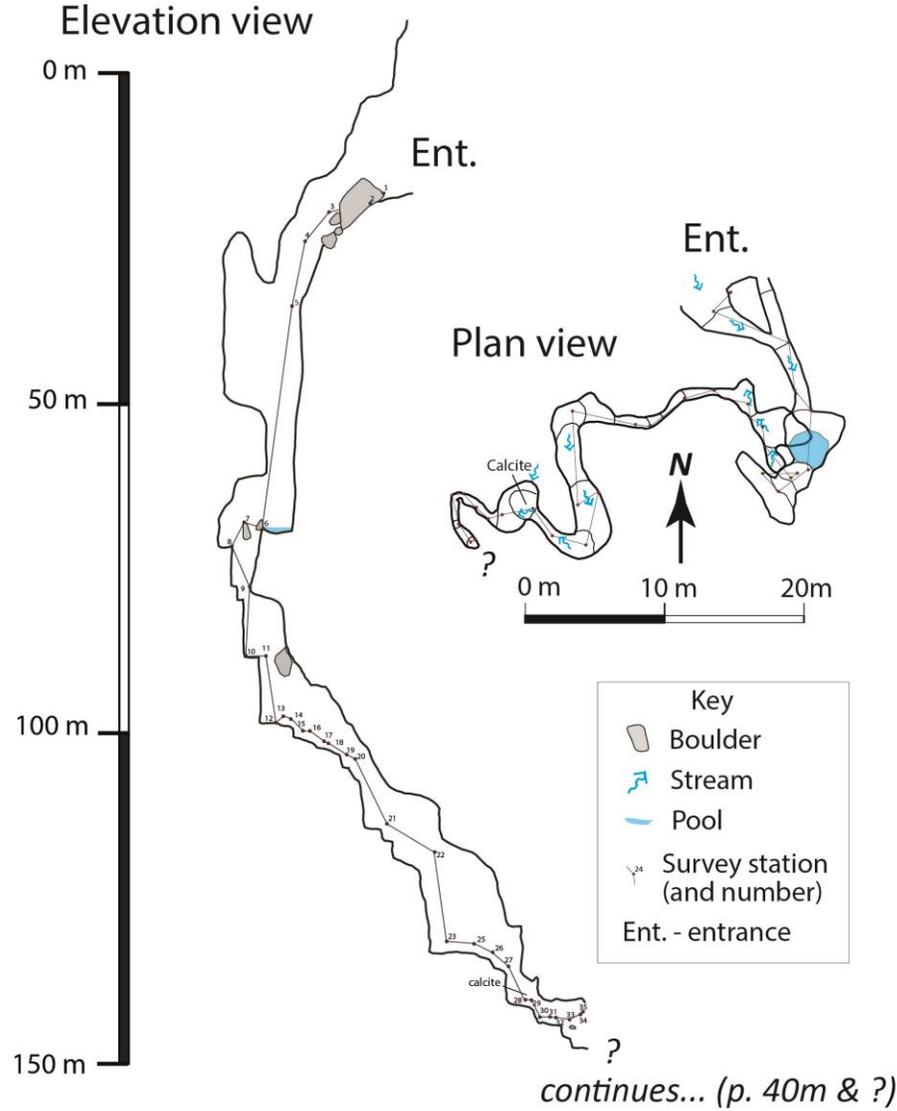




# Tragadero El Ojo Izquierdo De Lorenzo

Vista Alegre, Rodriguez de Mendoza, Amazonas, Peru.  
6.0251° South, 77.4767° West; Elevation 3,286m

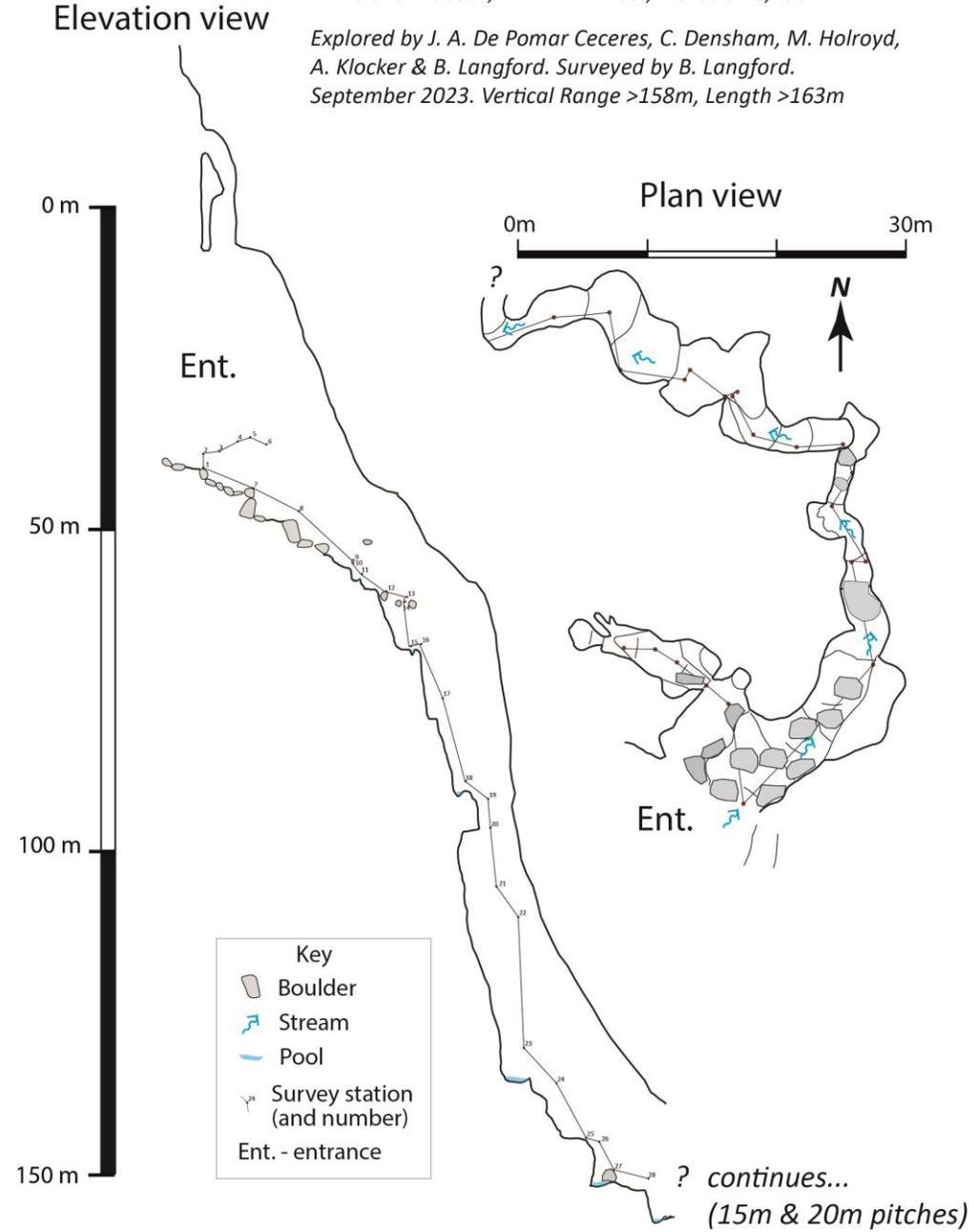
Explored by J. A. De Pomar Ceceres, C. Densham, M. Holroyd,  
A. Klocker & B. Langford. Surveyed by B. Langford.  
September 2023. Vertical Range >141m, Length >165m



# Tragadero El Ojo Derecho De Lorenzo

Vista Alegre, Rodriguez de Mendoza, Amazonas, Peru.  
6.0232° South, 77.4774° West; Elevation 3,290m

Explored by J. A. De Pomar Ceceres, C. Densham, M. Holroyd,  
A. Klocker & B. Langford. Surveyed by B. Langford.  
September 2023. Vertical Range >158m, Length >163m



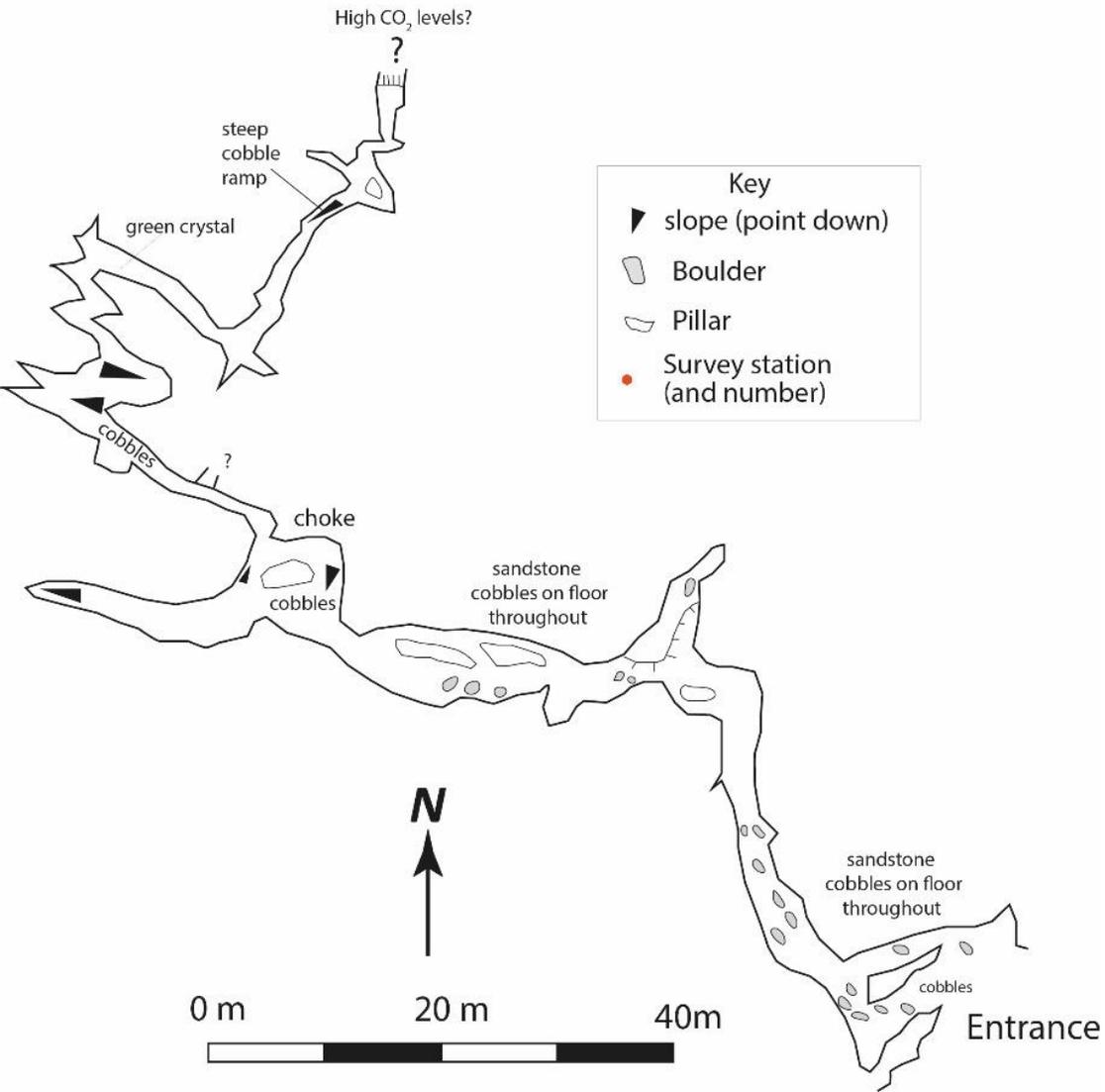


Dense fog can rise quickly, difficult to orientate without GPS

# Tragadero 2

Vista Alegre, Rodriguez de Mendoza, Amazonas, Peru.  
6.0687° South, 77.5128° West; Elevation 3,408m

Explored by P. Talling, C. Densham, R. Haemers, & D. Frohlich.  
Surveyed by C. Densham R. Haemers, & D. Frohlich. Drawn by P. Talling.  
September 2023. Vertical Range 16m, Length >195m



# Tragadero de Rayo Urmana

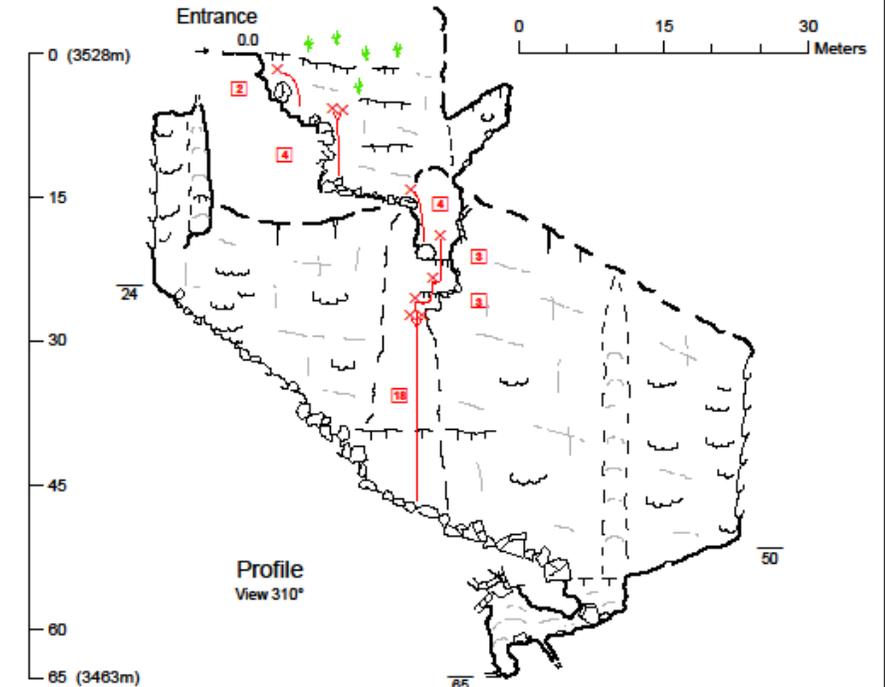
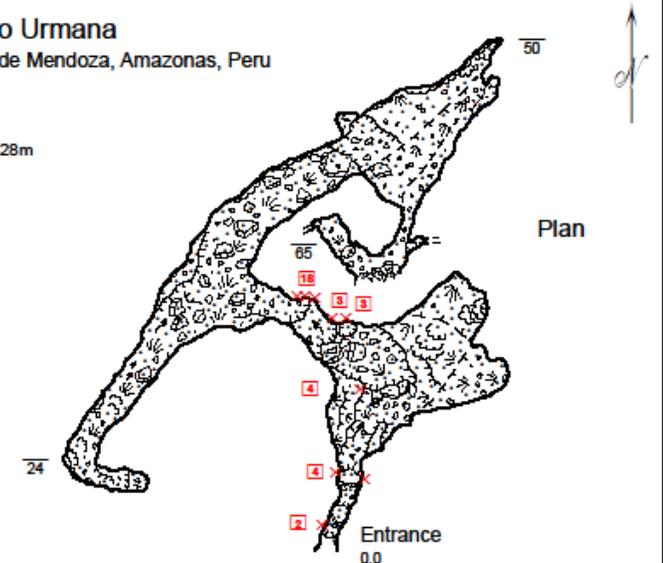
Vista Alegre, Rodriguez de Mendoza, Amazonas, Peru

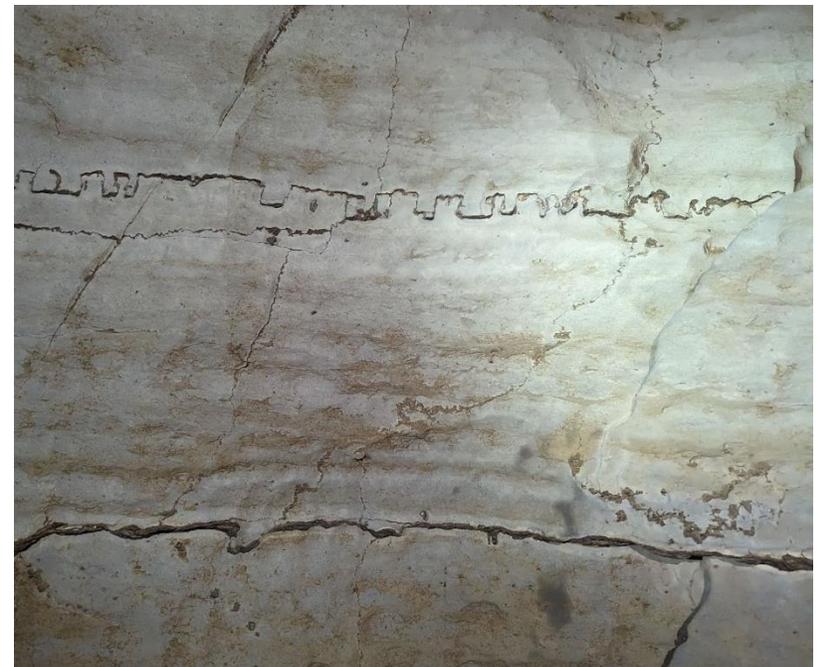
Length: 192 m  
Depth: -85 m  
-8.06305, -77.52106, 3528m

Surveyed Sept. 2, 2023  
by international team:  
Gareth Davies (GB)  
Mike Futrell (US)

## Legend

- rock/boulder
- ledge
- slope
- flowstone
- rope
- bolt

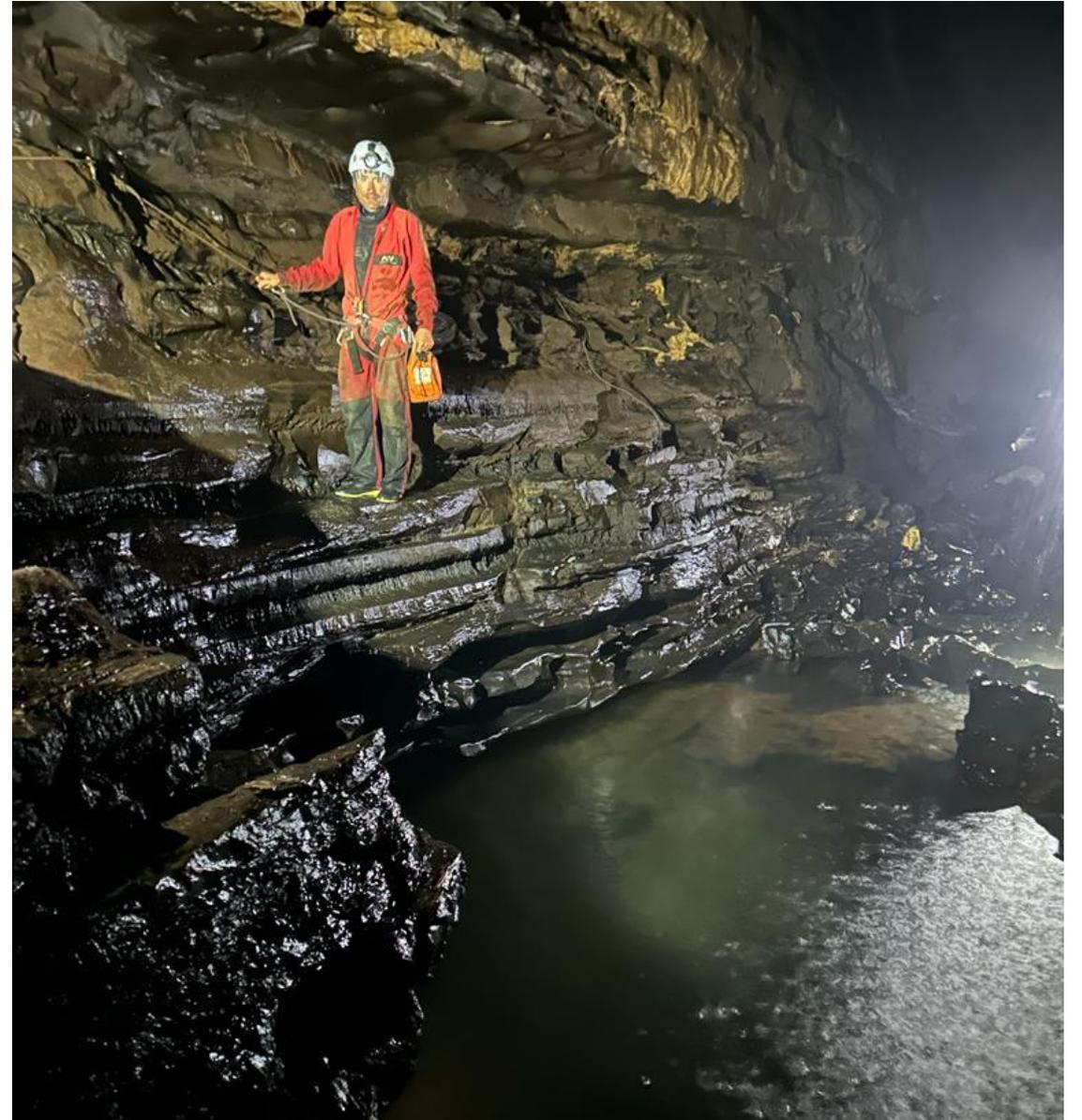




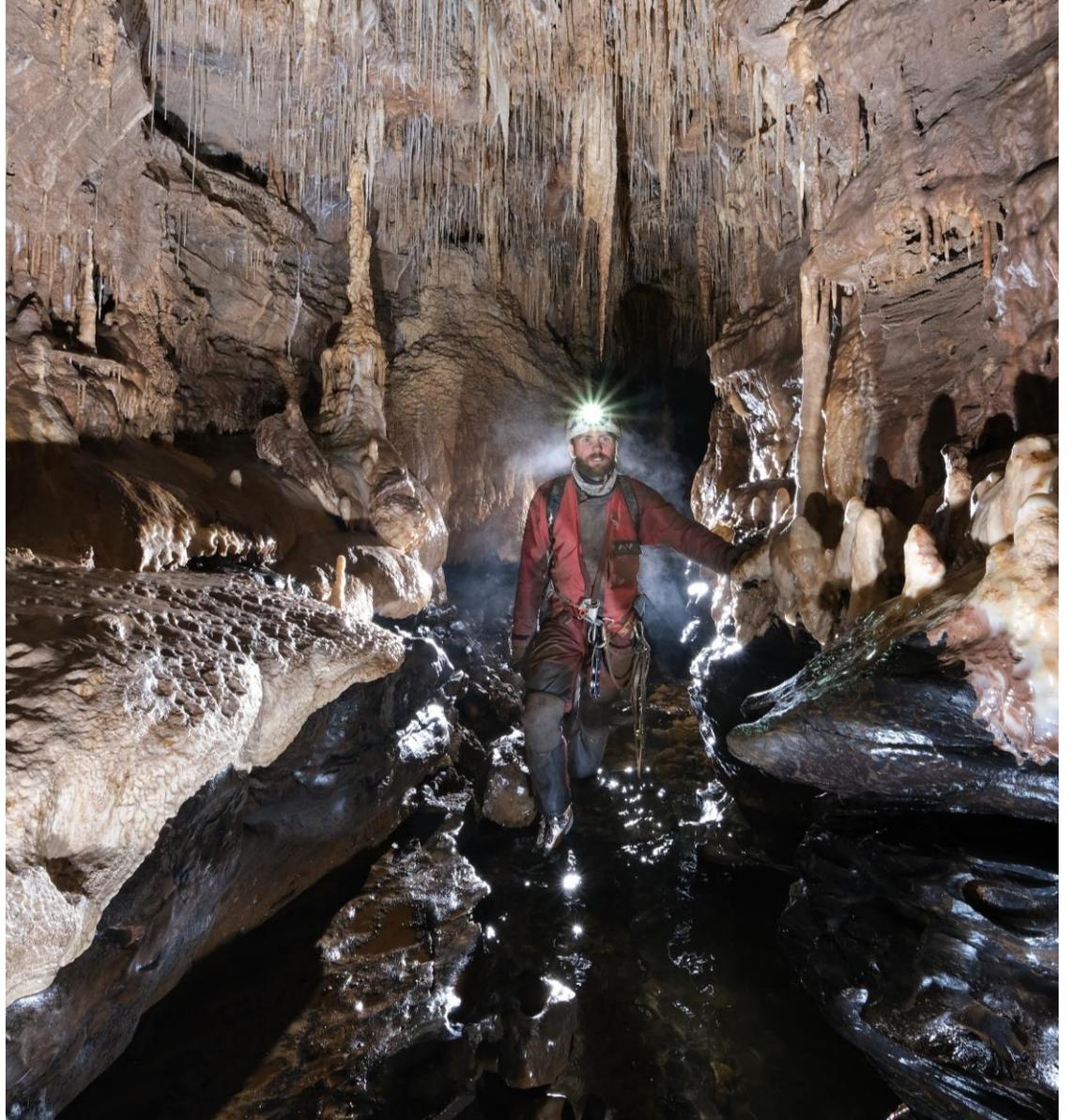
Tragadero 2



Getting strength in the cabin on the fire



River passages in Tragadero de la Soledad



# Tragadero de la Soledad

Vista Alegre, Rodriguez de Mendoza, Amazonas, Peru

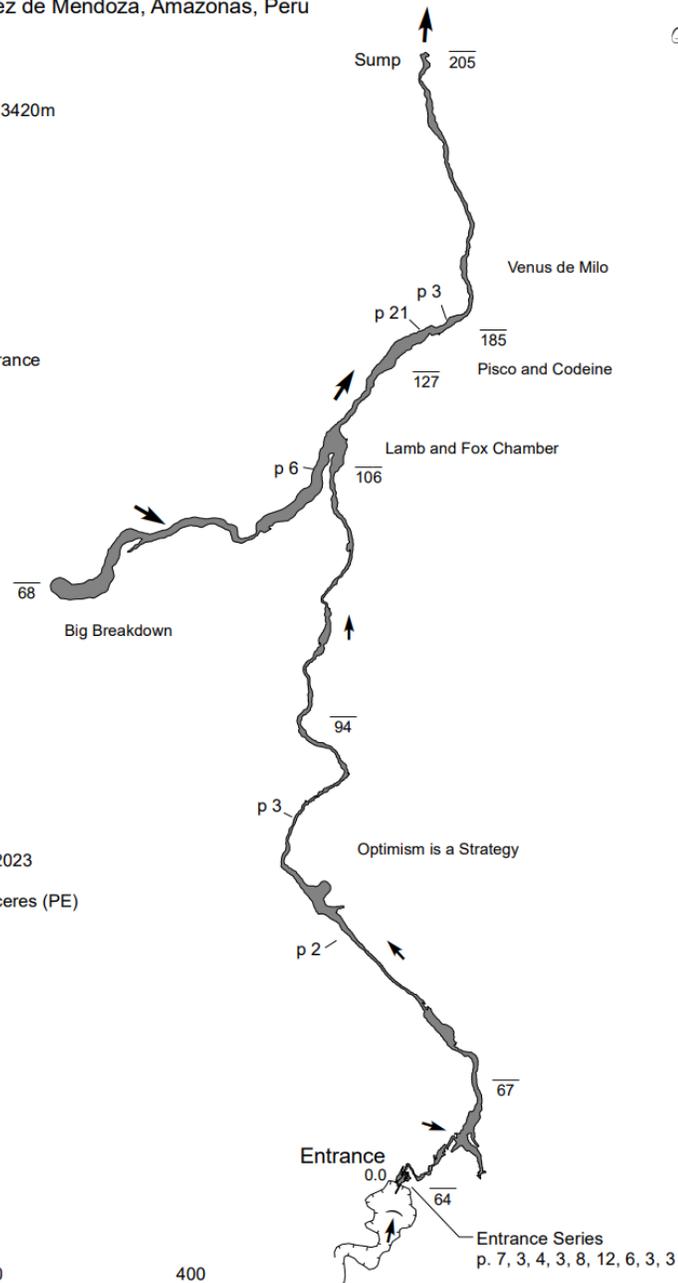
Length: 2345 m  
Depth: -205 m  
-6.06477, -77.51528, 3420m

➤ Stream

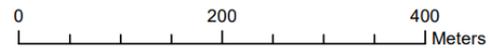
▬ Passage

94 Depth below Entrance

p 6 Pitch Depth



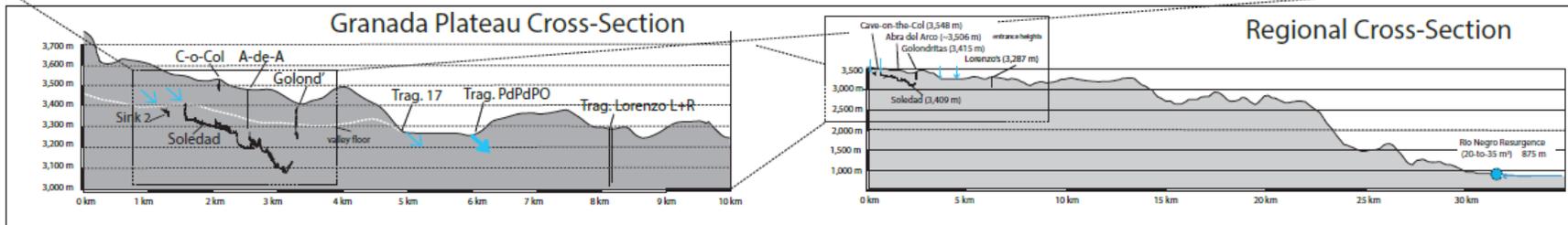
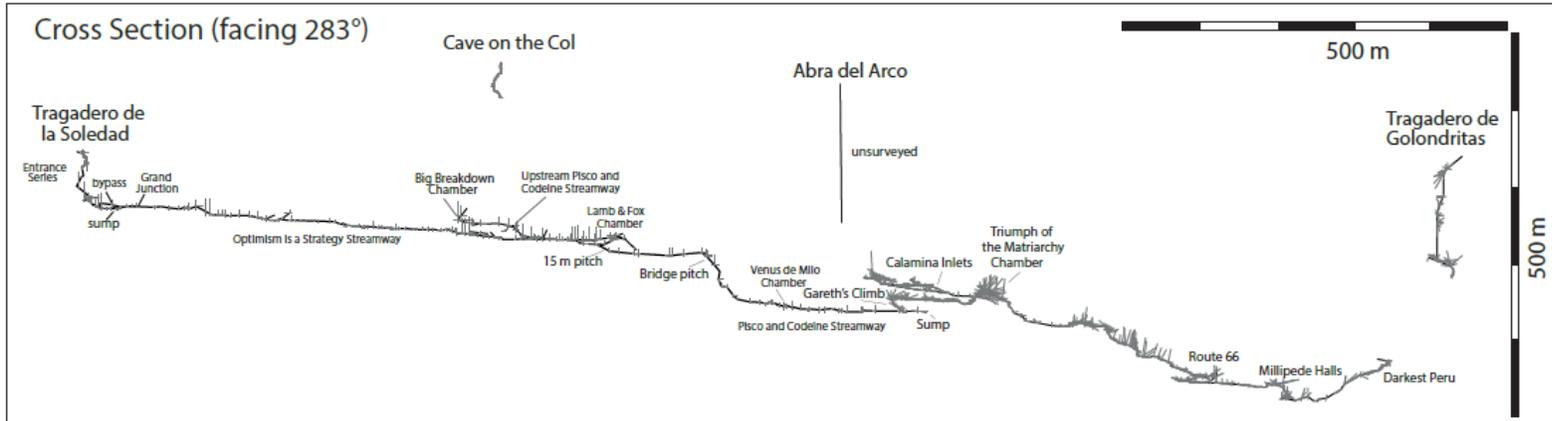
Surveyed Sept. 2-13, 2023  
by international team:  
Antonio De Pomar Cáceres (PE)  
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Boaz Langford (IL)  
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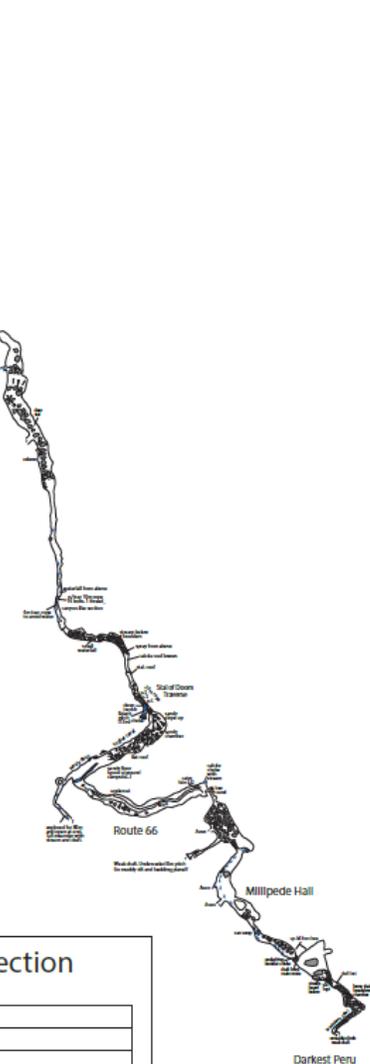
# Tragadero de la Soledad

Vista Alegre, Rodriguez de Mendoza, Amazonas, Peru.  
 -6.606477° South; -77.51528° West  
 Entrance altitude: 3,409 m  
 Length: 4,187 m  
 Depth: 323 m

Surveyed in 2023 and 2024 by Petie Barry, Jean-Yves Bigot, Aileen Brown, Antonio De Pomar Cáceres, Jules Carter, Gareth Davies, Chris Densham, Dominik Fröhlich, Mike Futrell, Réne Haemers, Martin Holroyd, Chris Jones, Andreas Klocker, Boaz Langford, Roisin Lindsey, Fleur Loveridge, Brian MacCoitir, Paul McCarron, Hannah Moulton, Tony Seddon, and Peter Talling. Drawn by Peter Talling



Tragadero de Golondritas







Plan view



Wagtail Sink

Sink 2

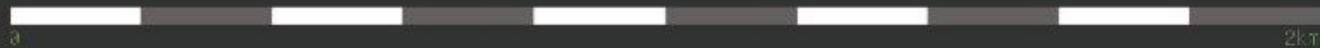
Soledad Ent

Torridon View

Arba del Arco

Rayo Urmana  
(2022-23)

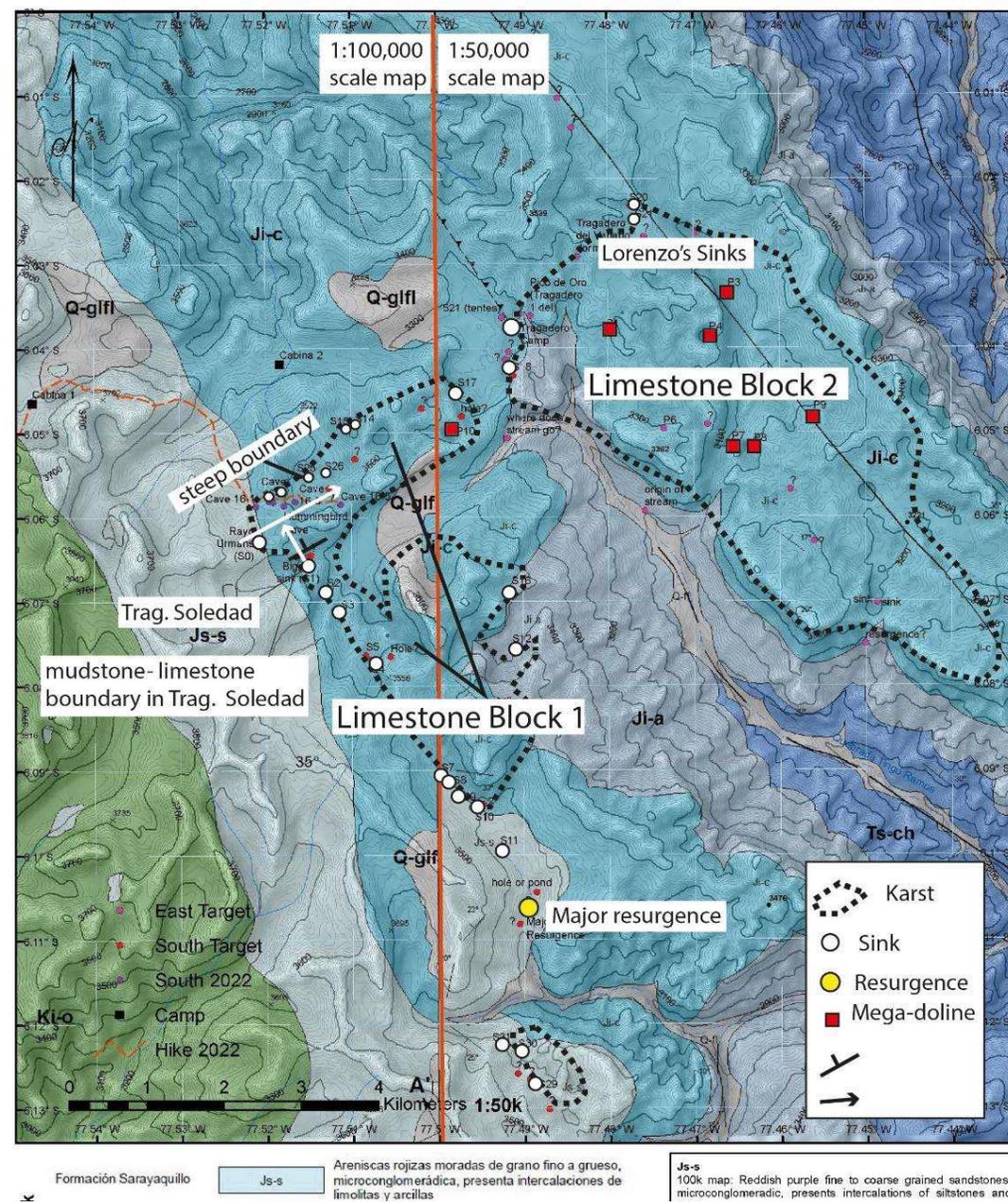
Cave on the Col



# Cross section Vertical







Geological map with superimposed information from field observations in the 2023 expedition, including areas of surface limestone karst and other geological observations.



Biospeleology, couldn't organize export regulations



Plants of the plateau





Horses arrive, getting ready for the way back

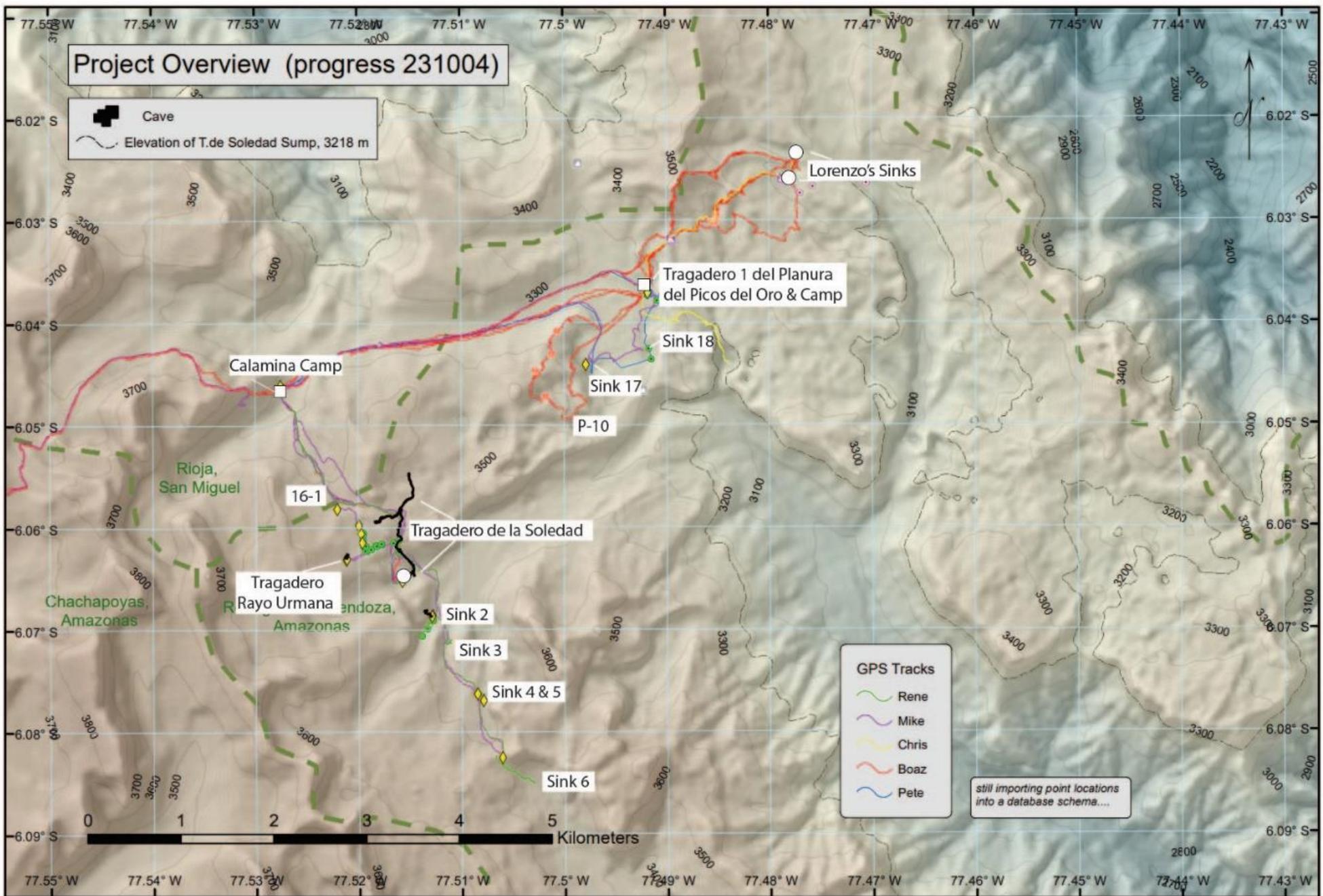




Horses can climb

# Project Overview (progress 231004)

 Cave  
 Elevation of T.de Soledad Sump, 3218 m



**GPS Tracks**

- Rene
- Mike
- Chris
- Boaz
- Pete

still importing point locations into a database schema....





Team got reunited (no picture from the plateau)

.....2026

