

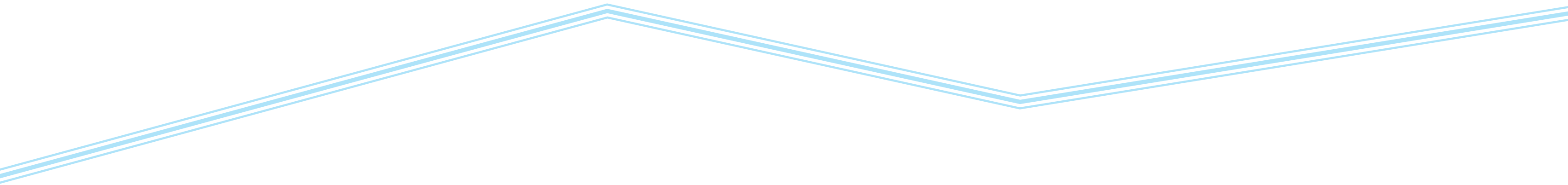
# WALKING OVER WATER

Case Studies of Vernacular Water Practices in the  
Yucatán

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Supported by Vincent Javet & Holly Nelson



# Contents

1. Maps - Regional, Caves, & Sites
2. Water in the current day
3. Case studies - Ek'Balam, Tulu'um, Koba'
4. Forms of water access & retention
5. Conclusions

# YUCATÁN PENINSULA

TOPOLOGY & GEOGRAPHY



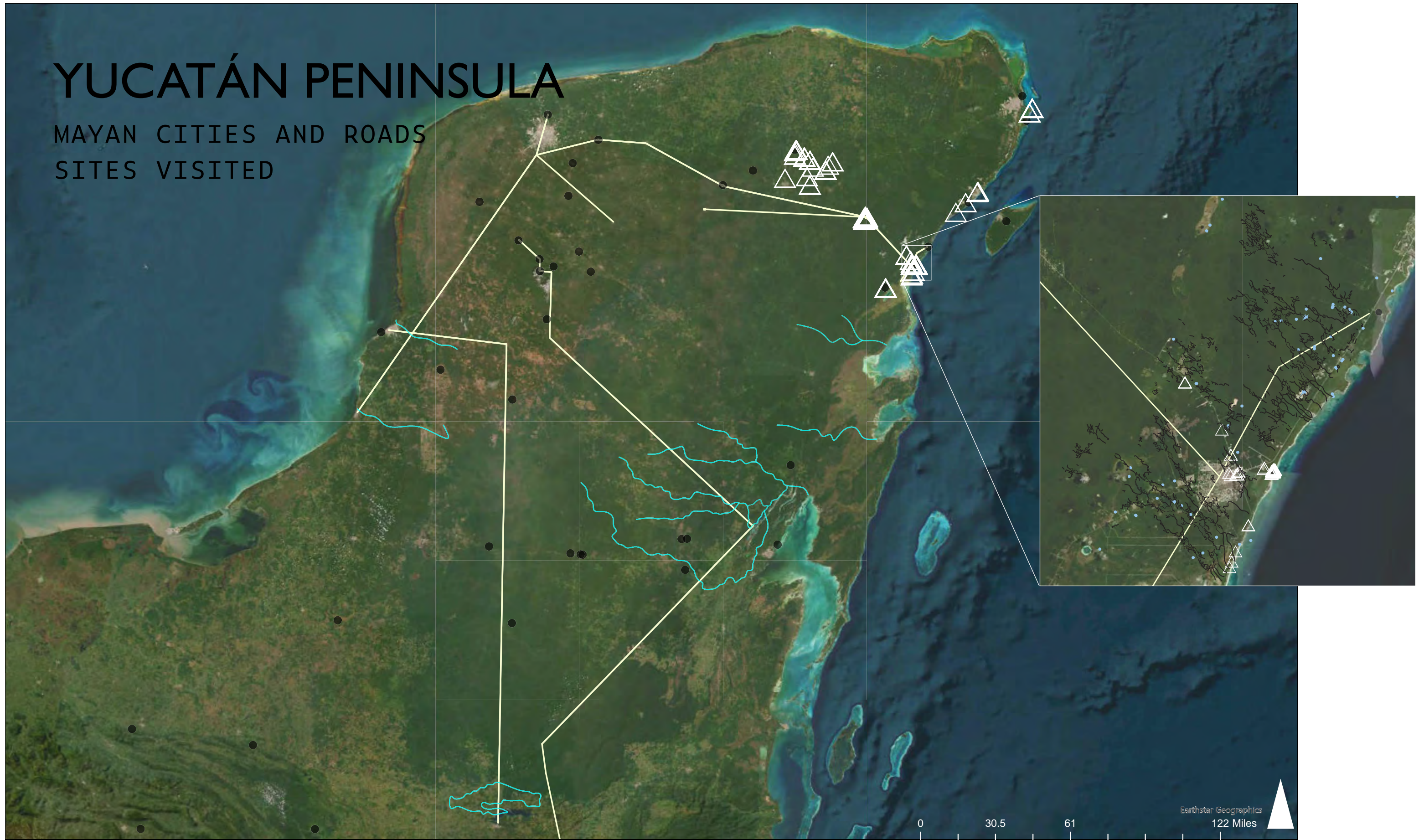
CHICHÉN-ITZÁ  
COBÁ RUINS  
YAXUNA  
TULUM  
XEL-HÁ RUINS

0 125 250 500 Miles



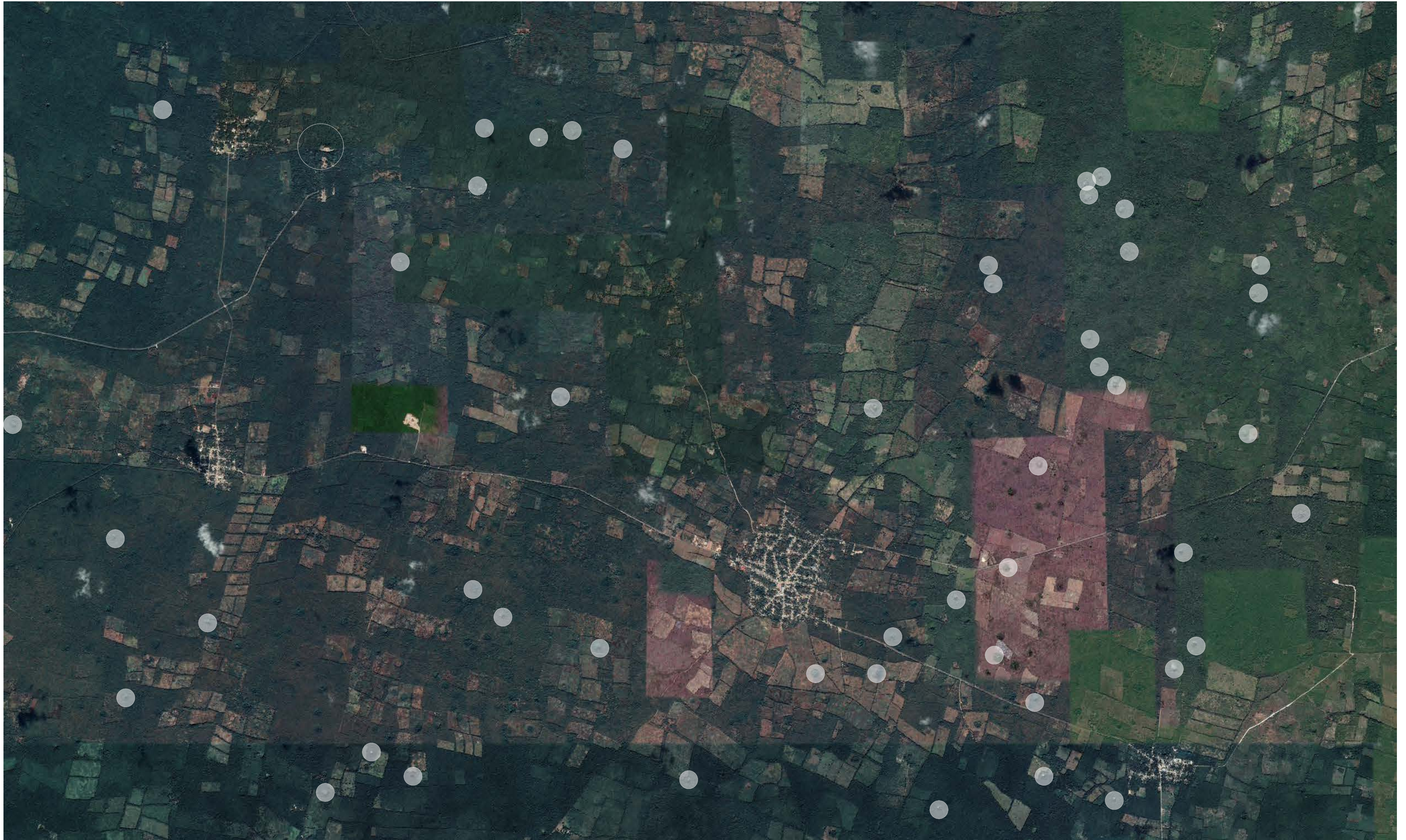
# YUCATÁN PENINSULA

MAYAN CITIES AND ROADS  
SITES VISITED



- Zonas Arqueológicas de México
- Rivers
- Sacbeob
- △ Sites Visited
- Cavernas

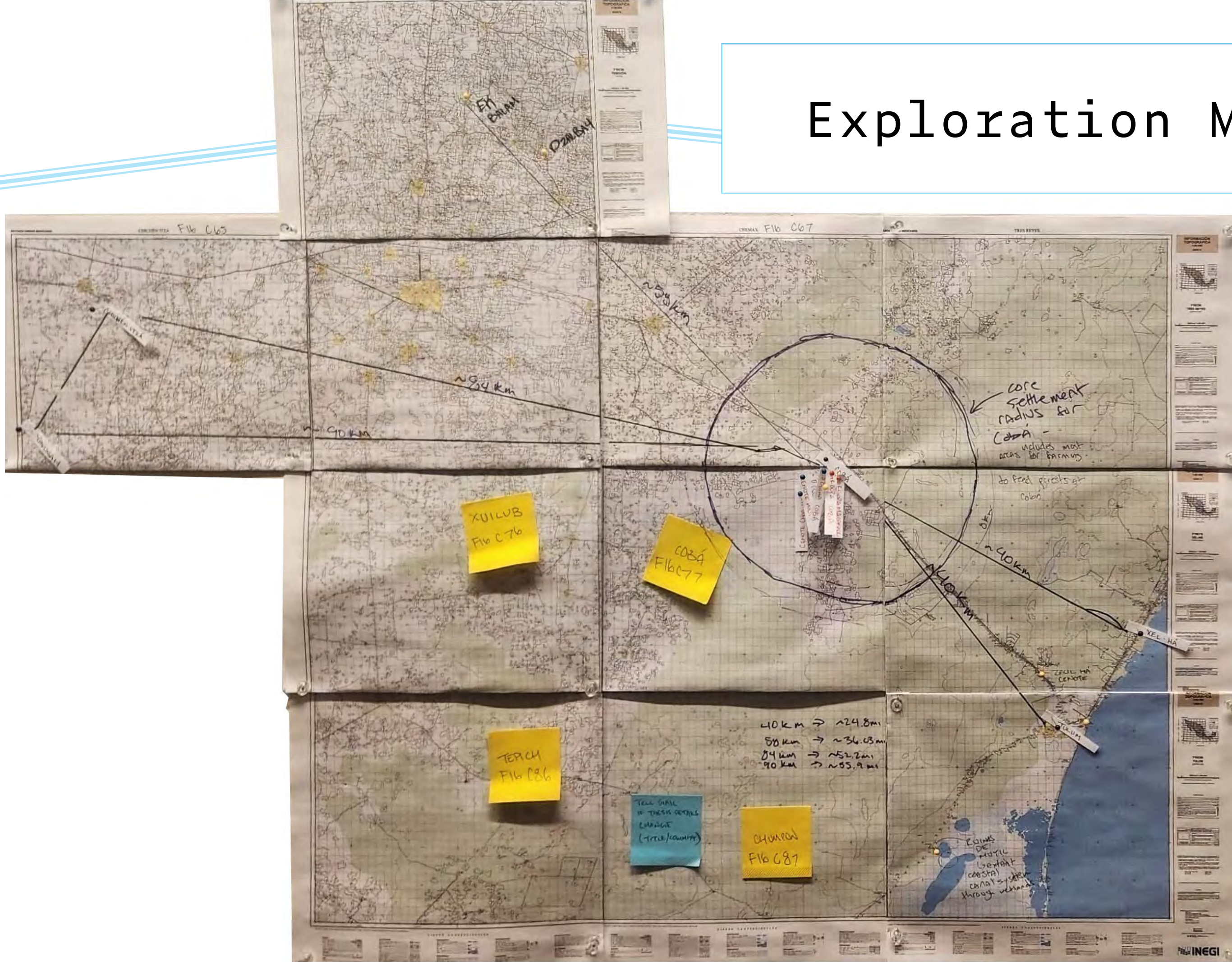
Earthstar Geographics  
122 Miles







# Exploration Map

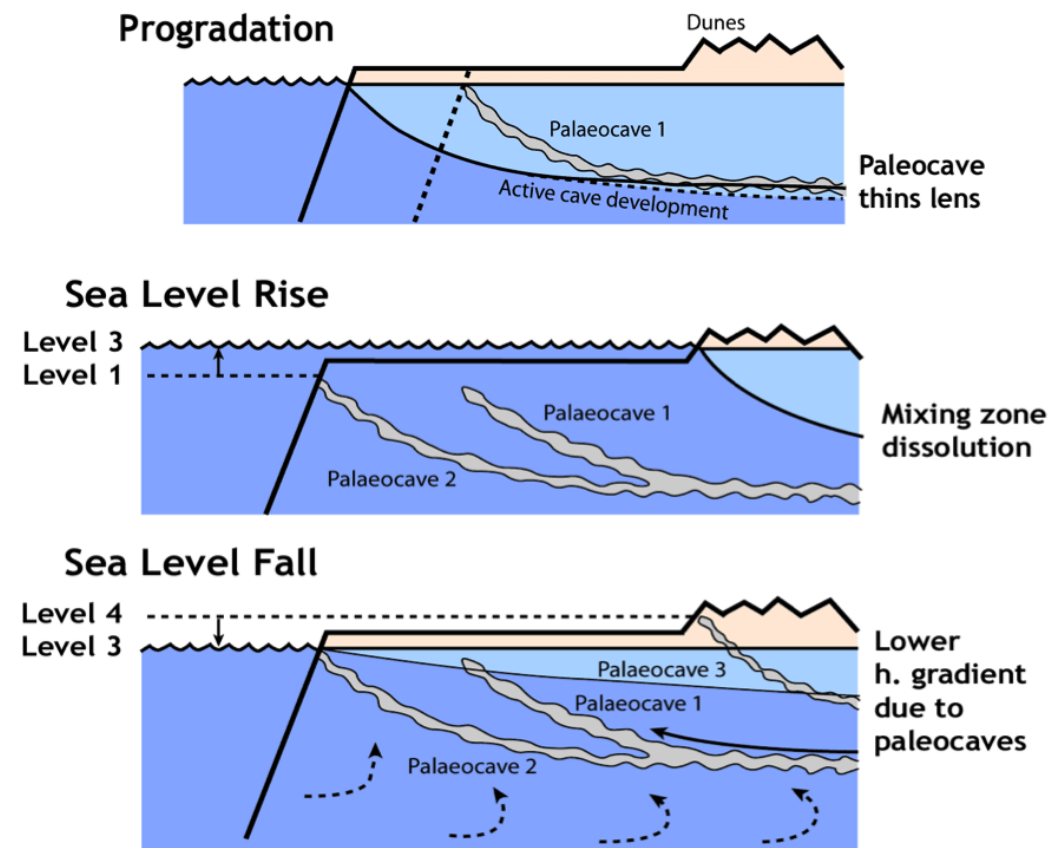






# CURRENT APPROACHES

- > Rainfall: 900mm-1,400mm (35in-55in) annual average
- > Residents, agriculture, and business rely entirely on water pumped and purified from the aquifer
- > Access to aquifer through wells and cenotes
- > Cenotes are primarily for recreation



Water reclamation and collection plant outside Playa Del Carmen

3000 ft





①



②



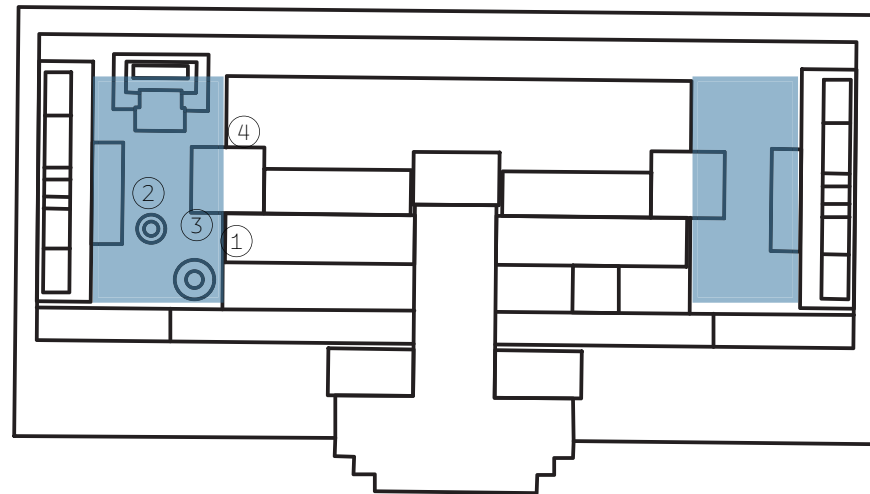
③



④

# CASE STUDY : EK' BALAM

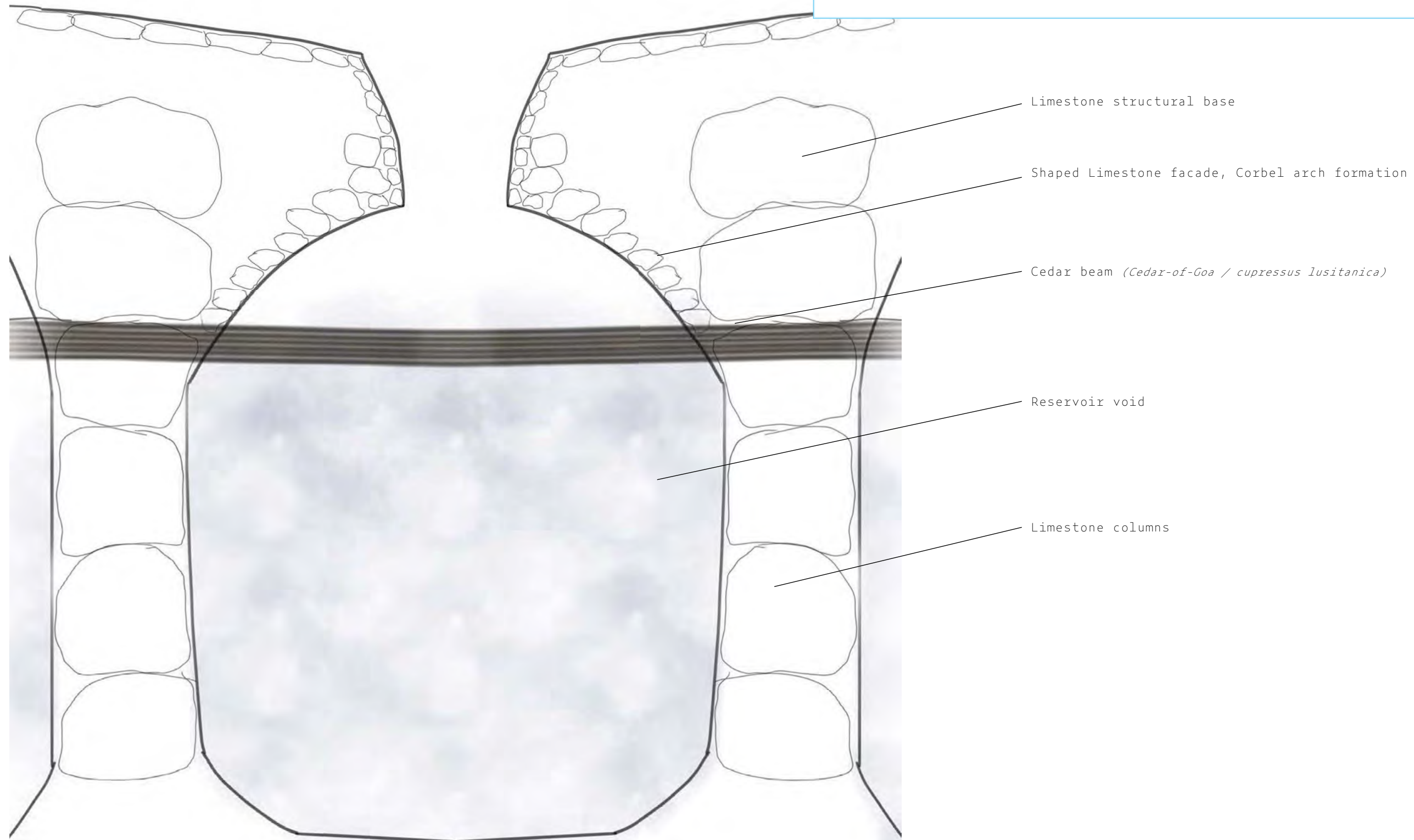
- > Lowland temple complex surrounded by intermittent wetlands
- > Major population center of Northern Lowland from 770 CE - 840 CE
- > Temple complex features outer walls around a raised platform connected by radial sacbe to surrounding villages
- > Uses 2 cenotes, one ritual and one daily



Aerial of sacbe connecting Ek'Balam's temple complex to the village cenote complex

900ft

# CASE STUDY : EK' BALAM



Sample cross section of the Serpent Pyramid at Ruinas de Ek'Balam, with vertical exaggeration. Not be to scale.

# CASE STUDY : TULU'UM



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①

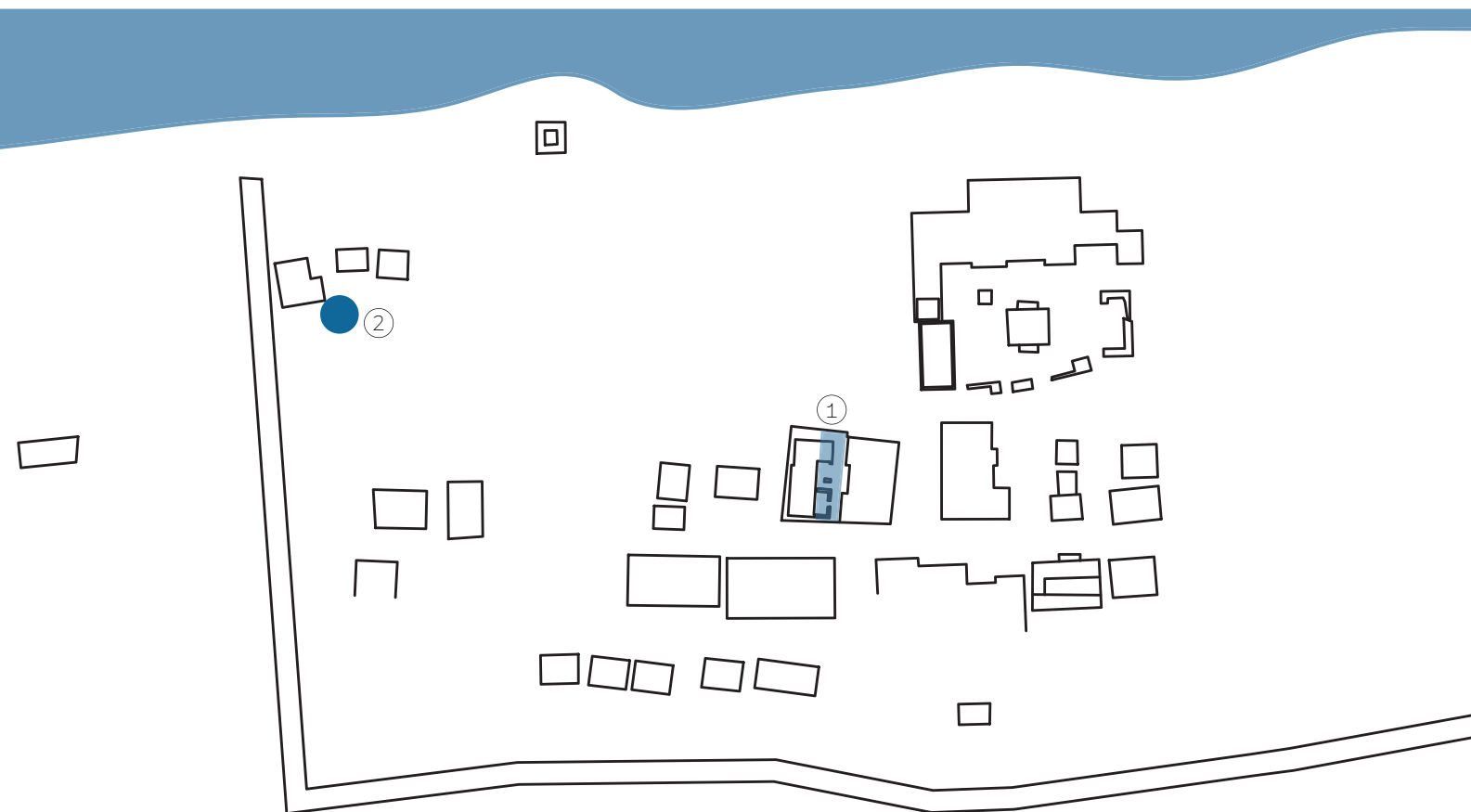


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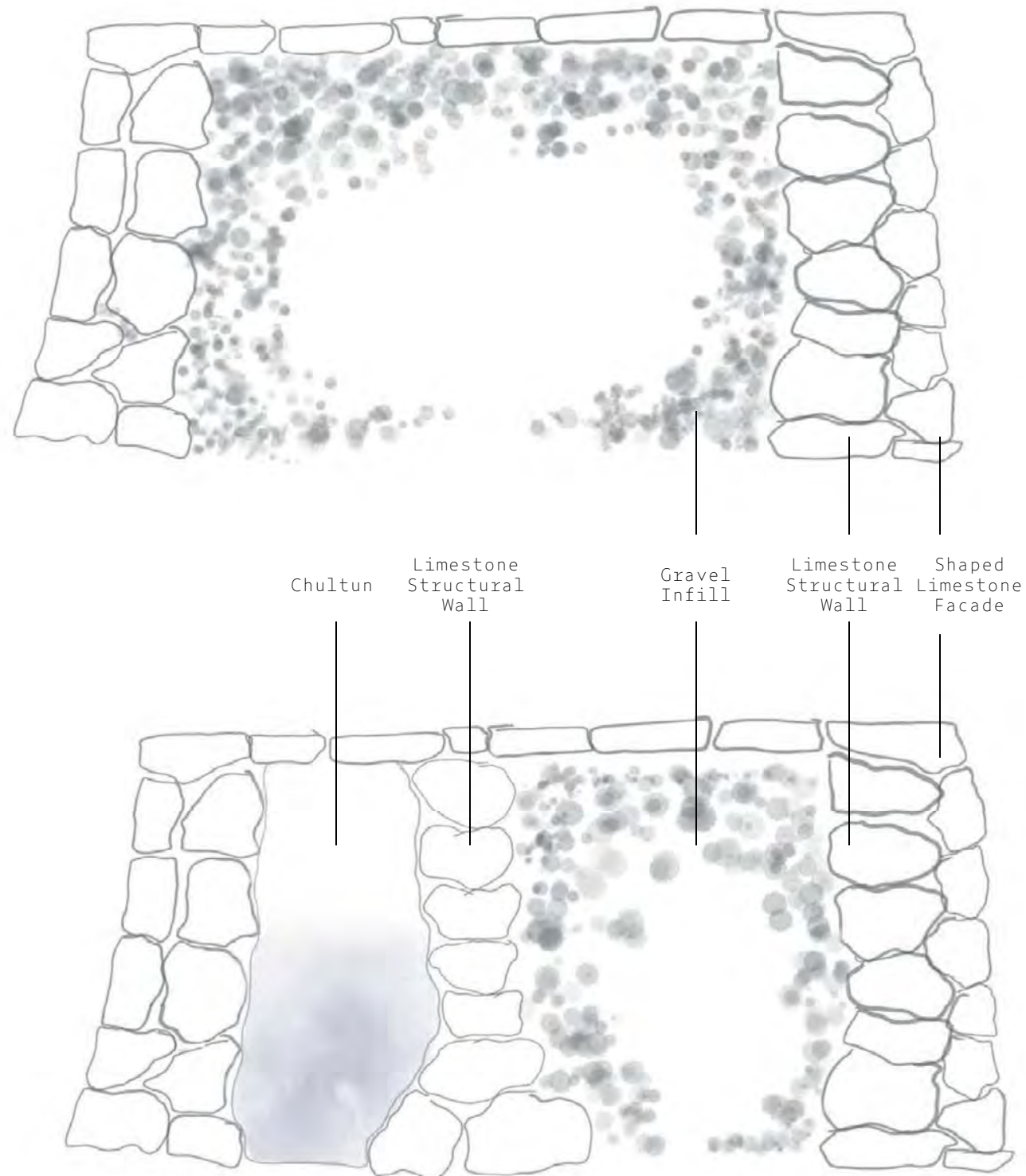
- > Cliffside Settlement delineated by limestone walls and ocean cliffs
- > Served as a trade port settlement for Cobá
- > Features 1 small freshwater cenote within city walls, suitable for ceremonial use
- > Surrounded by many freshwater cenotes of varying size and depth



Aerial of Ruinas de Tulu'um

500ft

# CASE STUDY : TULU'UM



- > Outer surfaces of platforms would be coated in waterproofing clay and painted
  - > Platform surface finished with sand and pavers
- > Water accessed through stepped cavities into the chultun or wells
- > Water is transported using waterproofed gourds or ceramic pottery

Sample cross sections of a residential platform at Ruinas de Tulu'um. May not be to scale.



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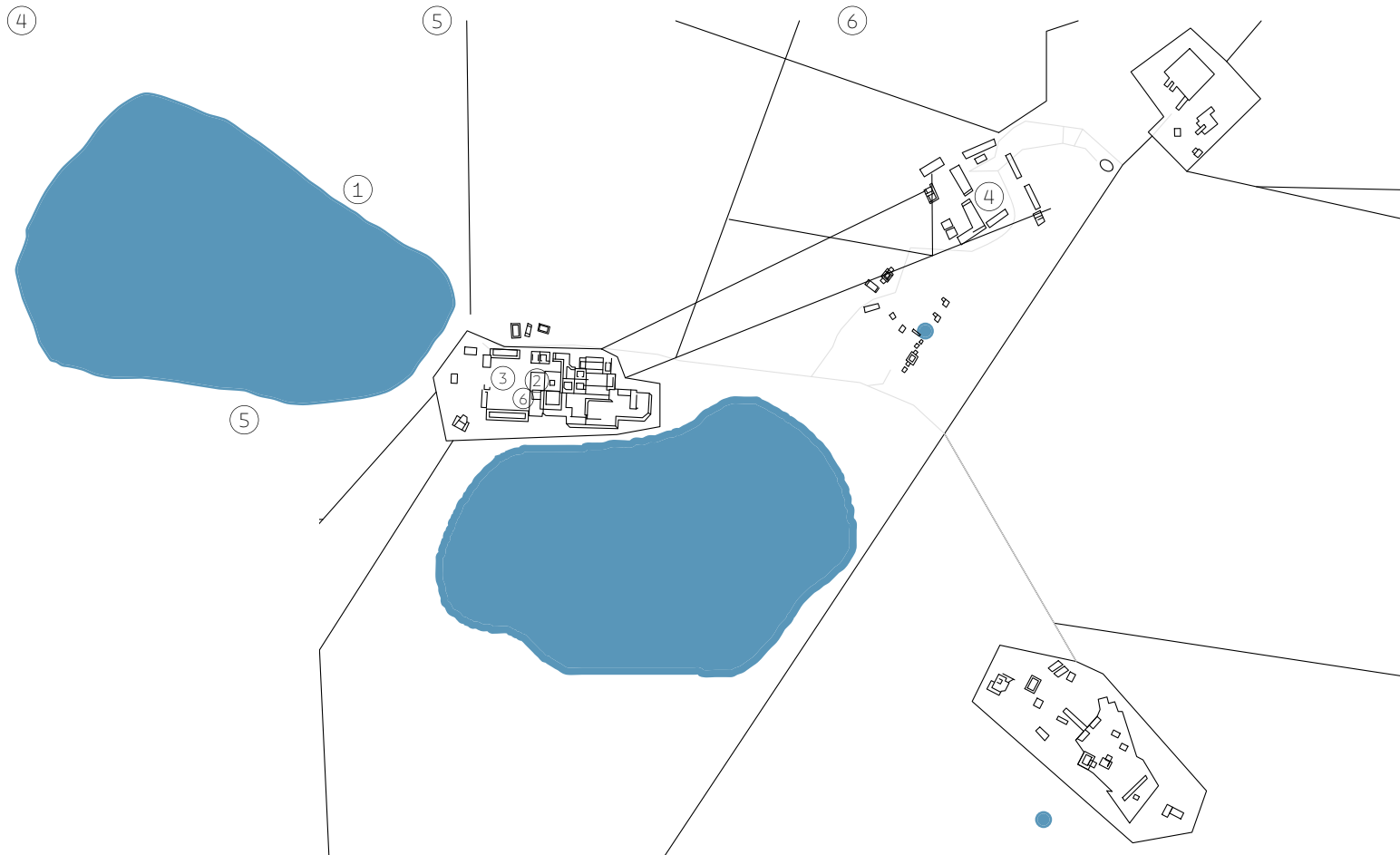
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⑥



# CASE STUDY : KOBA'

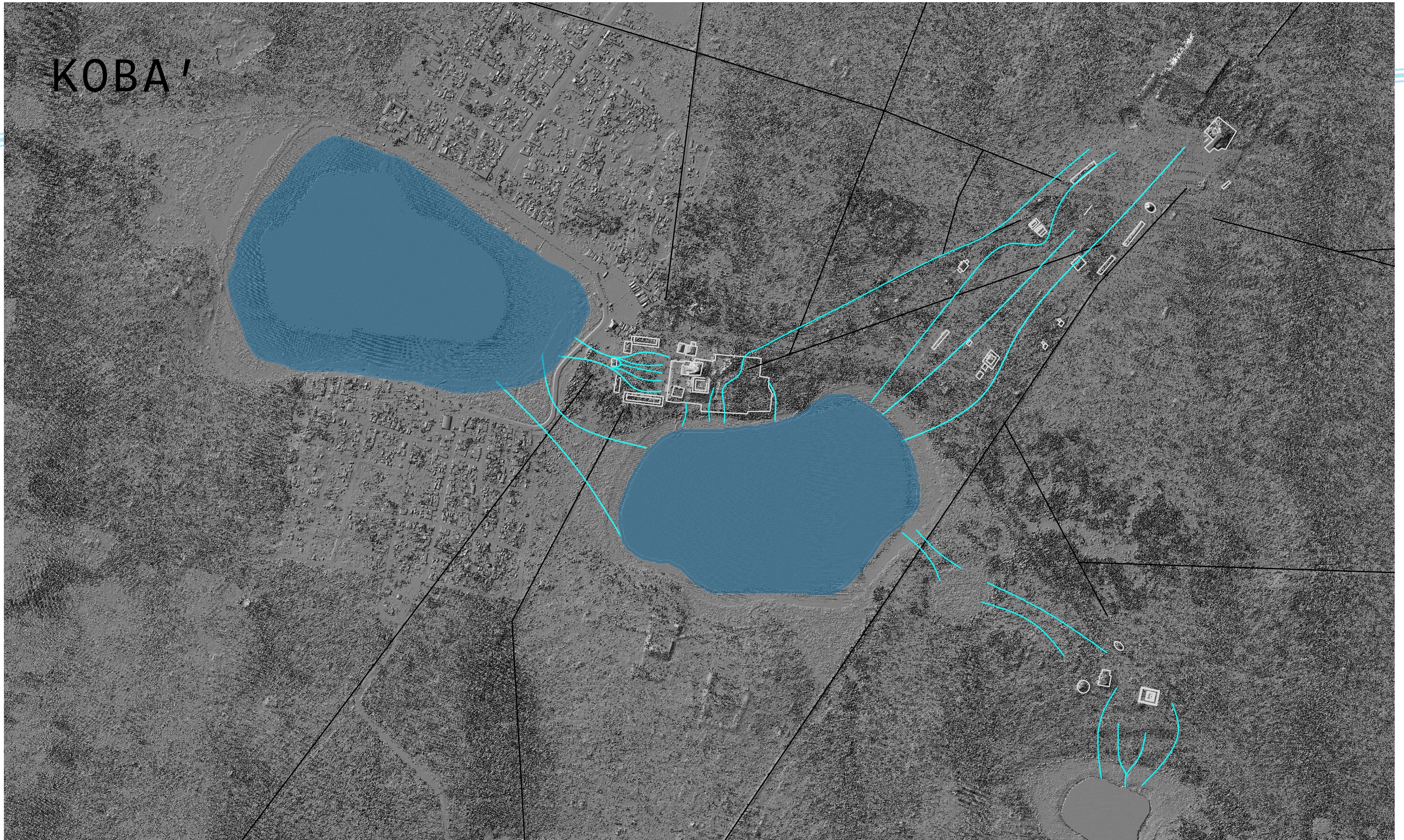
- > Lakeside city surrounded by 75km of subordinate villages
- > Held considerable regional cultural power from 100 CE - 600 CE
- > Largest source of surface freshwater in Quintana Roo state



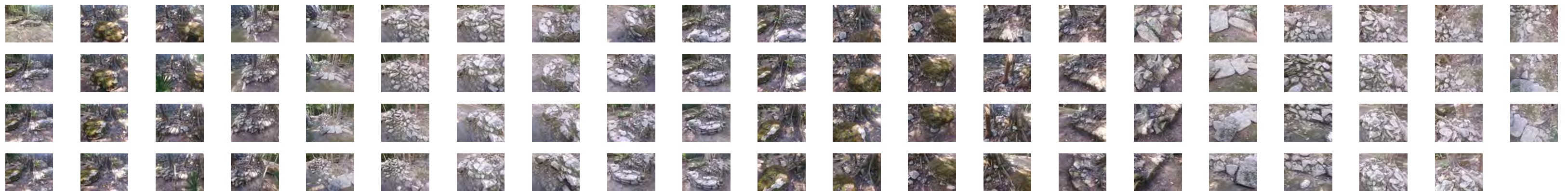
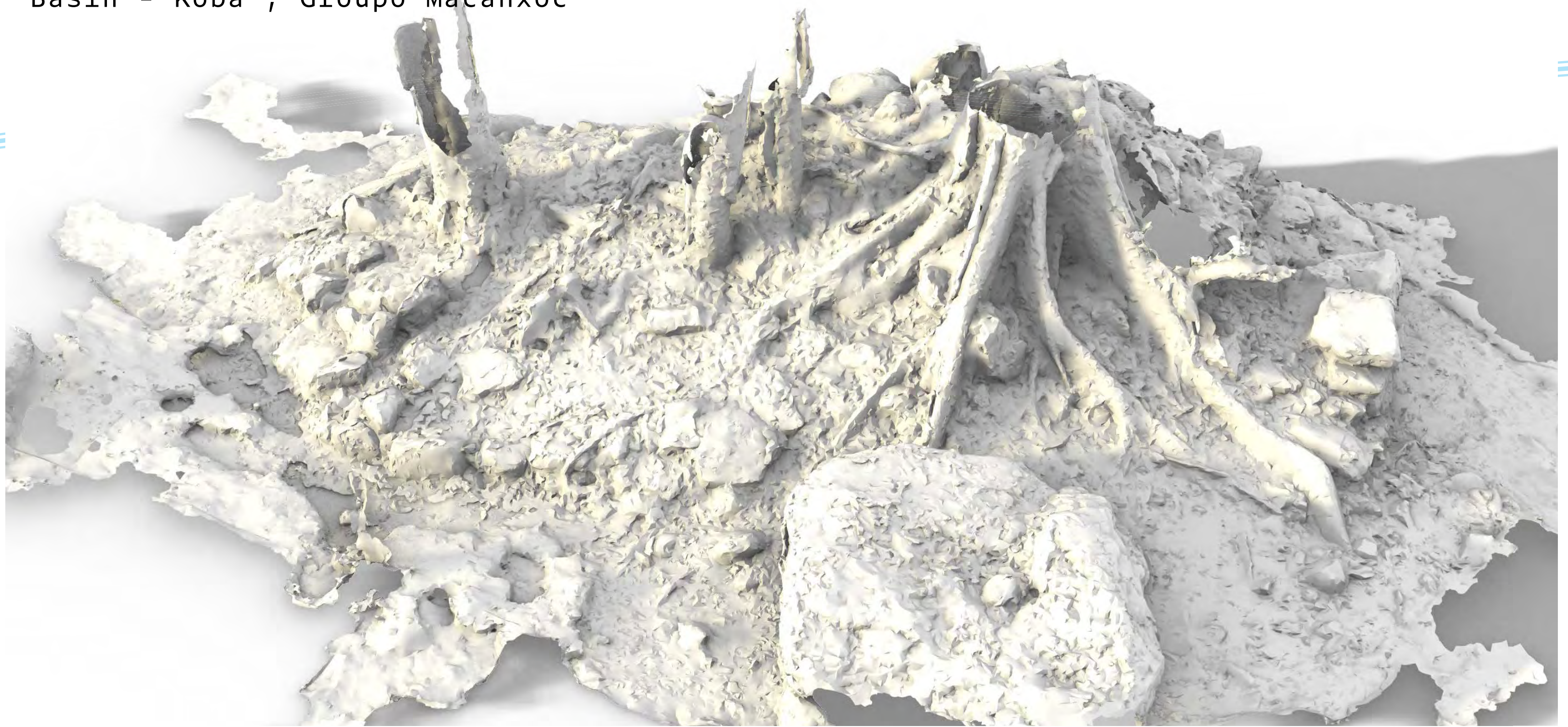
2000ft



KOBA'

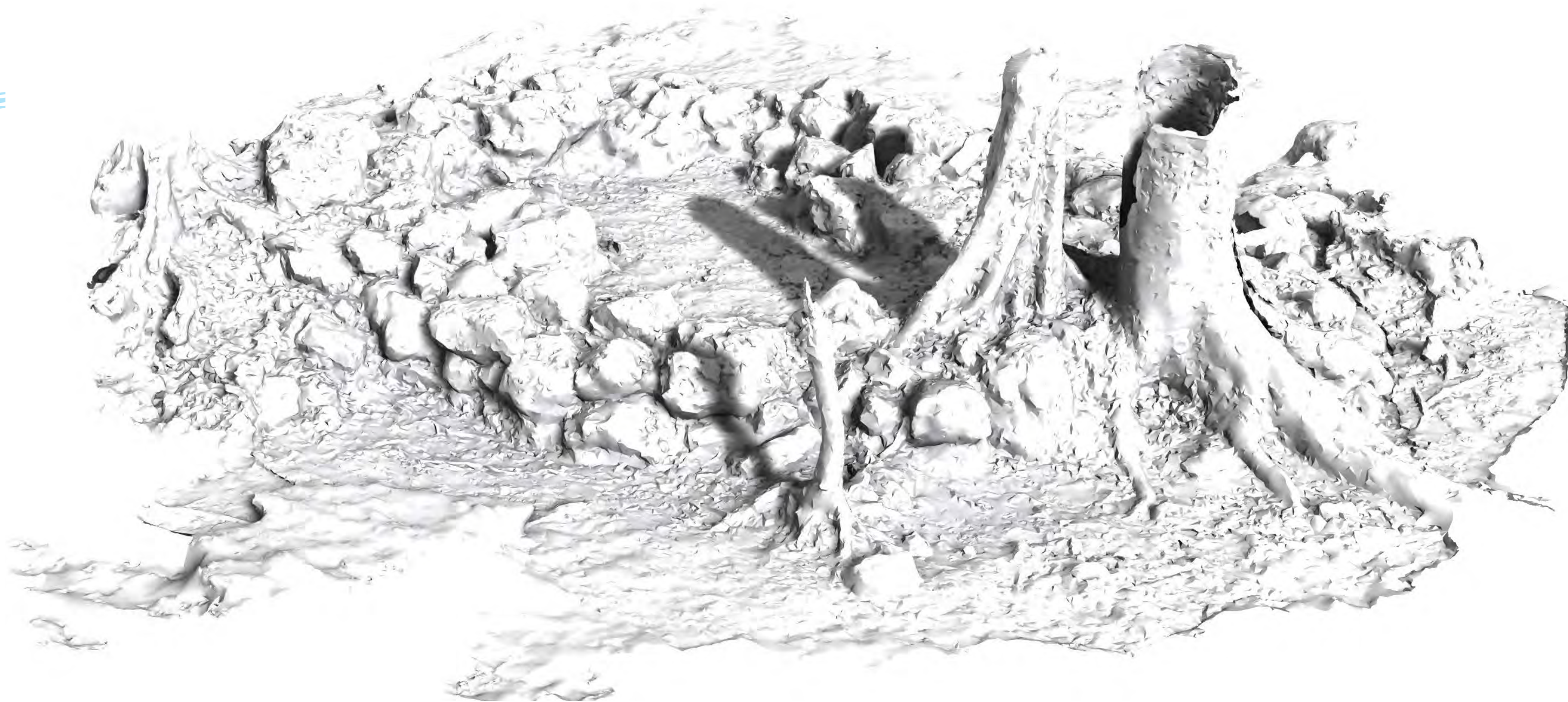


Basin - Koba', Groupo Macanxoc

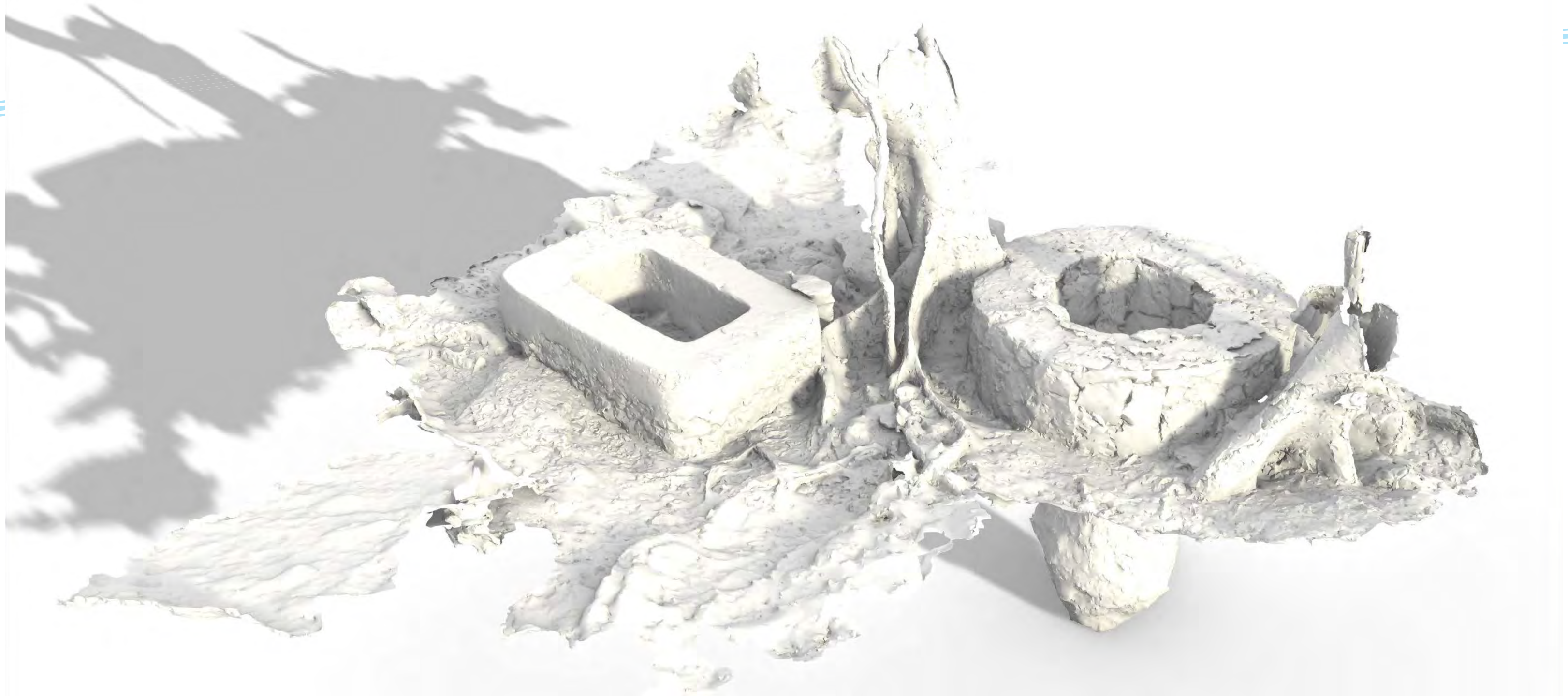




# Basin - Koba', Conjunto Pinturas



# Basin and Well - Dzalbay, near Ek'Balam



# Possibilities

- > Re-introducing vernacular water management techniques can more sustainably work with local hydrotopographies in contrast to contemporary engineering water management solutions
- > Photogrammetric modelling of complex site elements can supplement existing modes of representation in site visualization
- > Advances in 3D simulation and modelling techniques open more avenues for predictive design solutions that are better prepared to meet real-world variables

