

Wet-Areas Mapping (WAM)

Initiative for Ñuble, Chile

using

Digital Elevation Models (12 to 2 m)

to locate

temporary to permanent Flow Channels

Floodplains

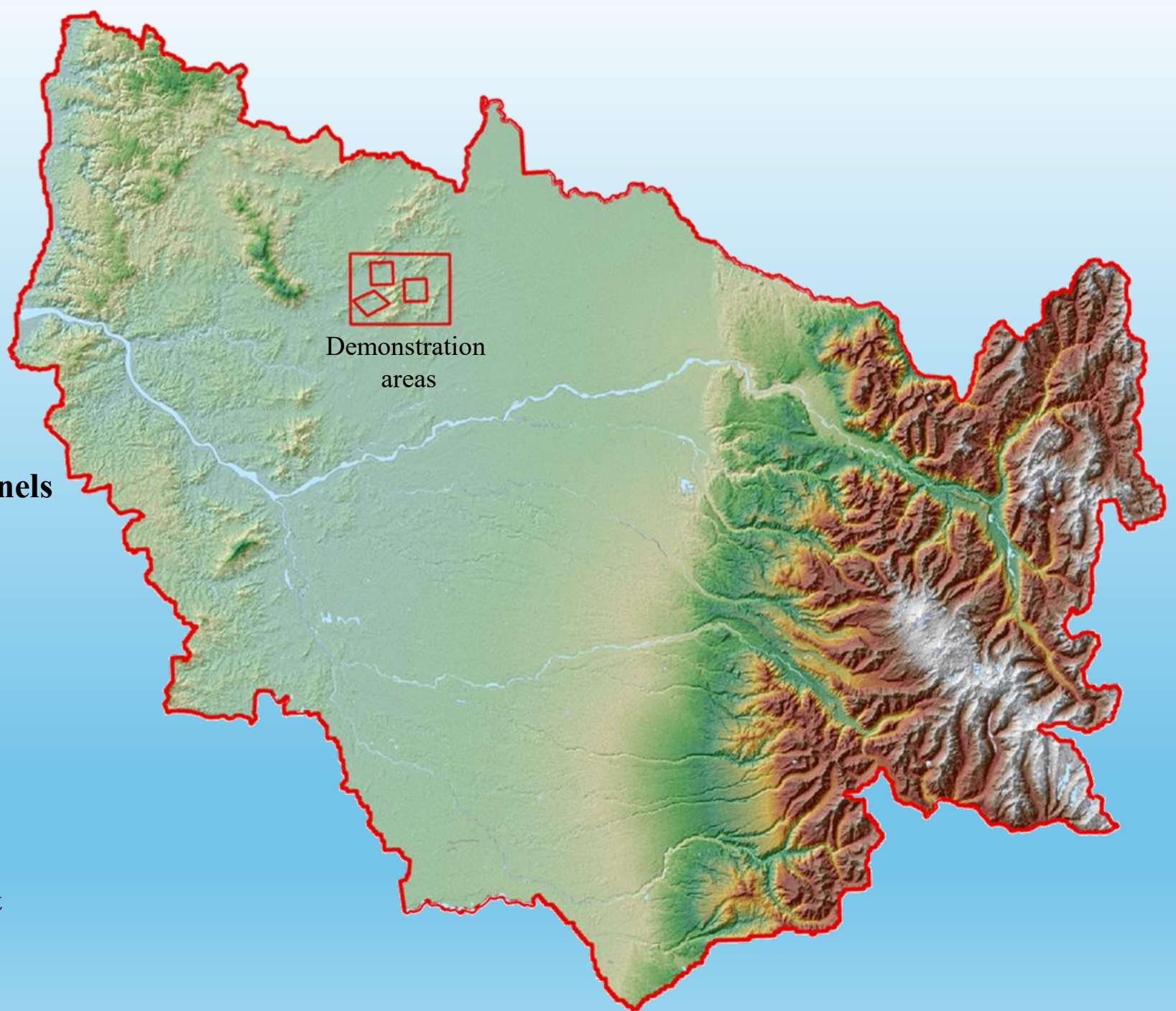
Depressions

Contours ...

... done to assess

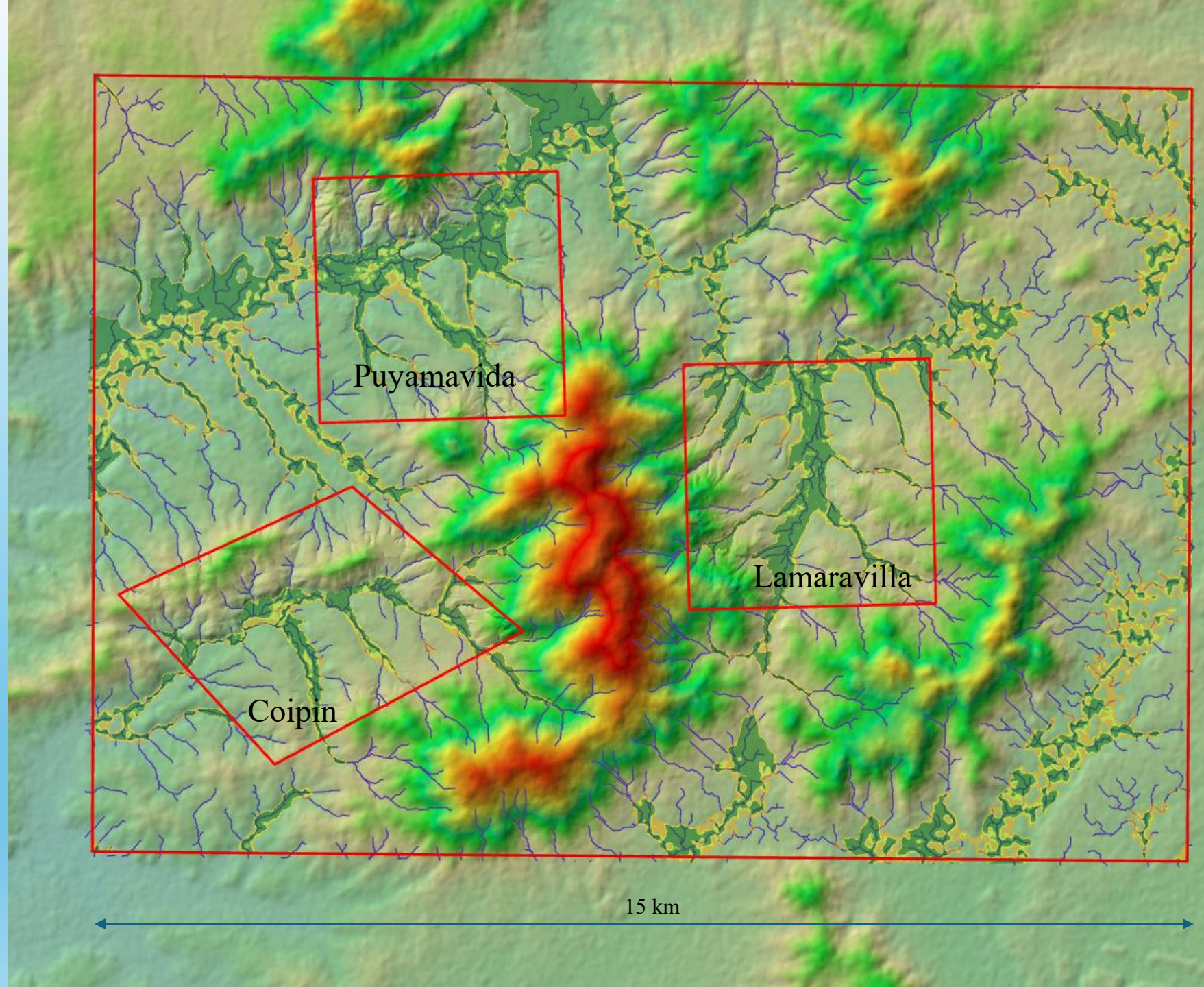
Water Flow Accumulation Impacts &

related Water Harvesting Potentials



Floodplain
Mapping,
0 up to 4 m,
along
flow channels
with > 100 ha
upslope flow
accumulation
areas.

Background:
ESRI
World image
overlaid on
hillshaded DEM

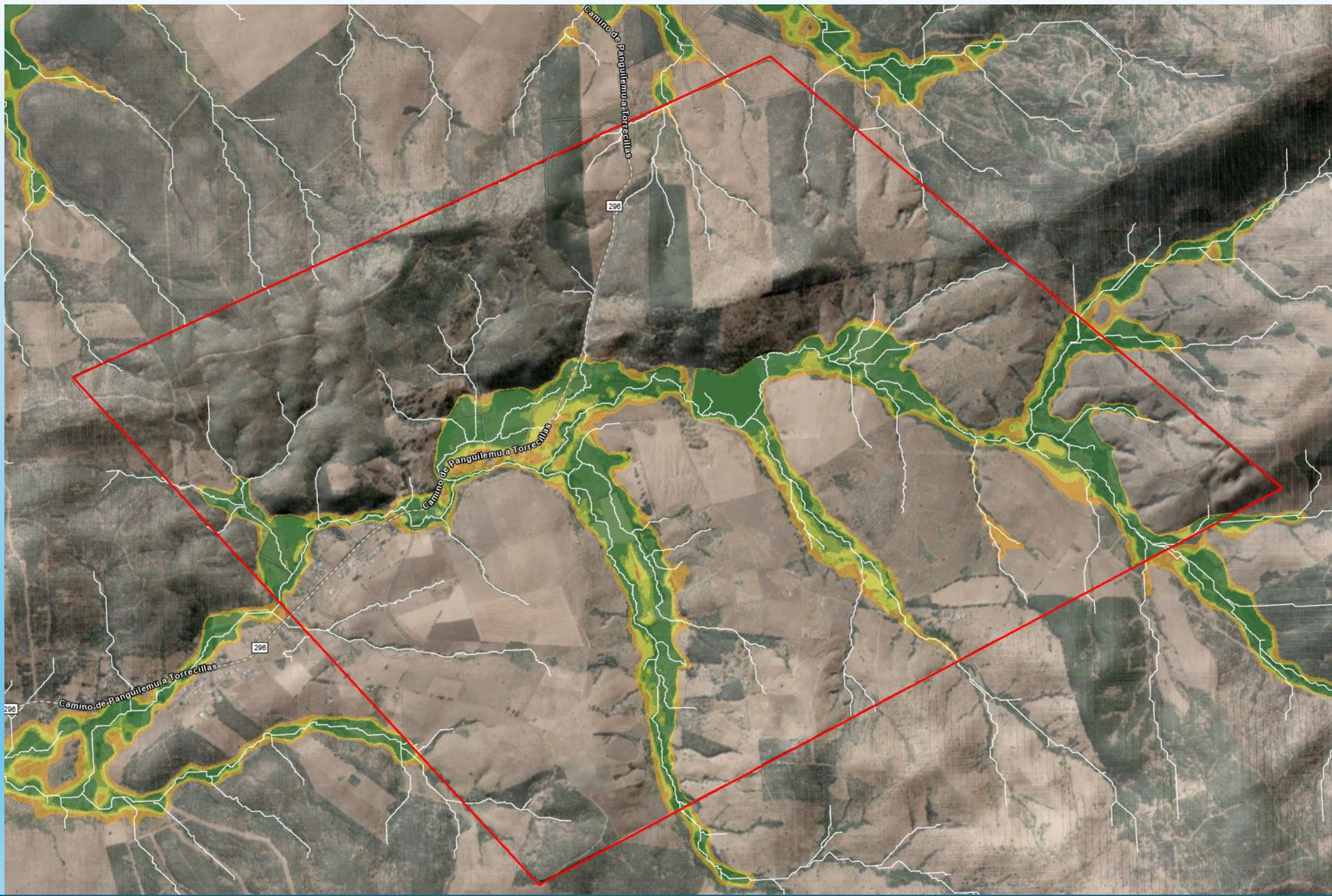


Coipin

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White lines: flow channels
with > 4 ha upslope
flow accumulation areas

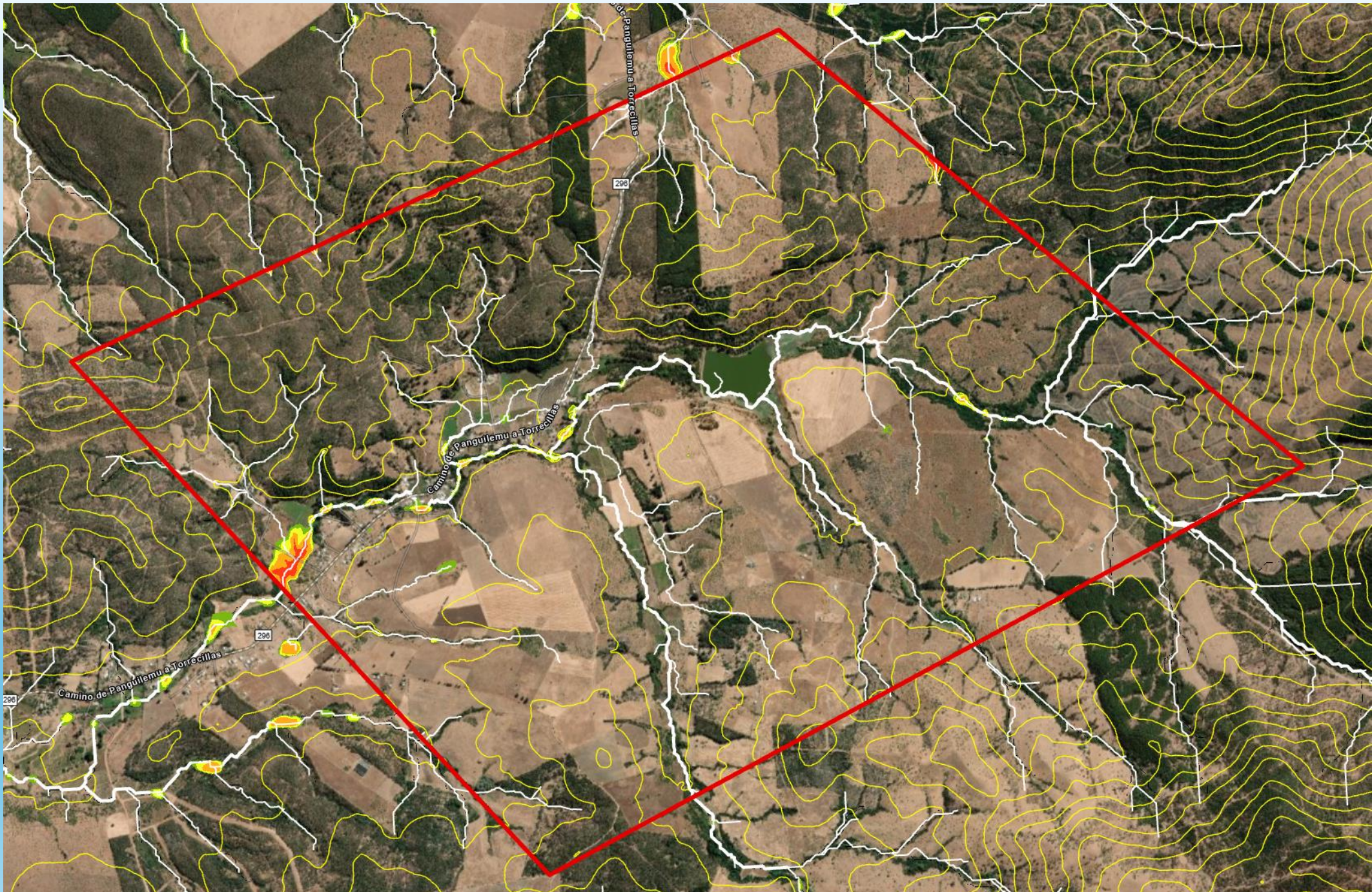


Coipin

20 m contours
flow channels
with > 4 ha
%
>100 ha
upslope flow
accumulation
areas

also showing
depressions
up to 4 m deep (red)

Background:
ESRI
World image

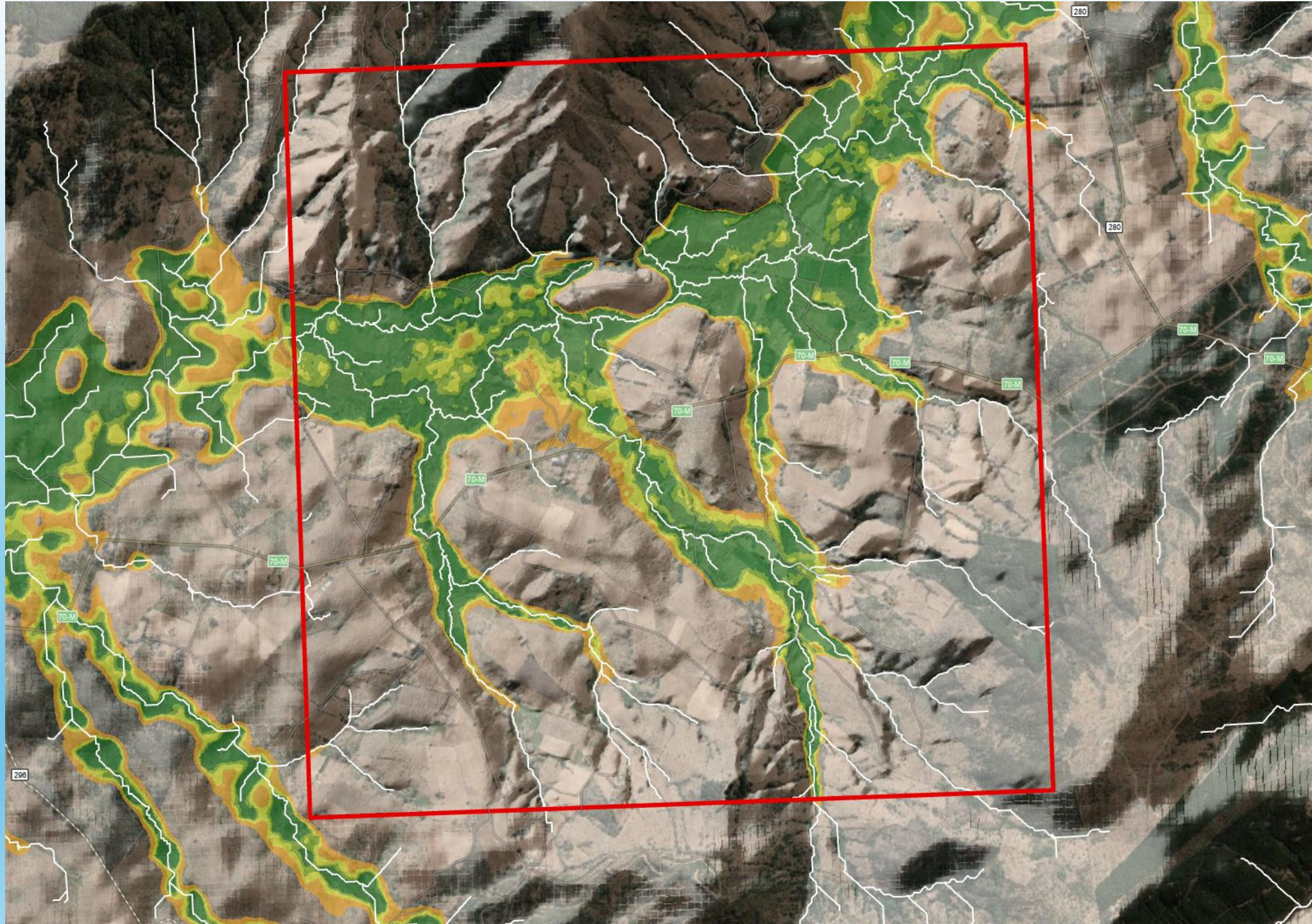


Puyamavida

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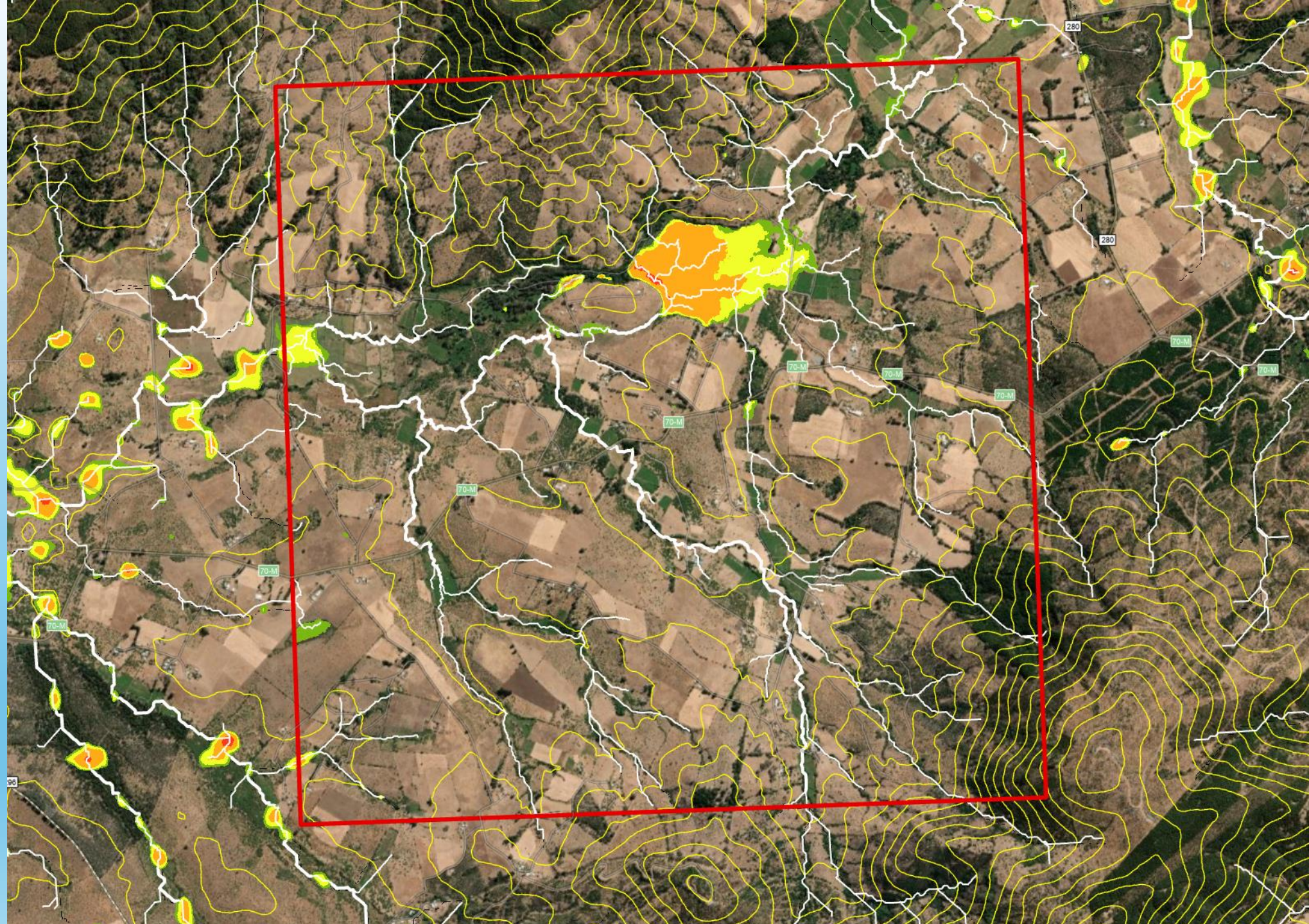


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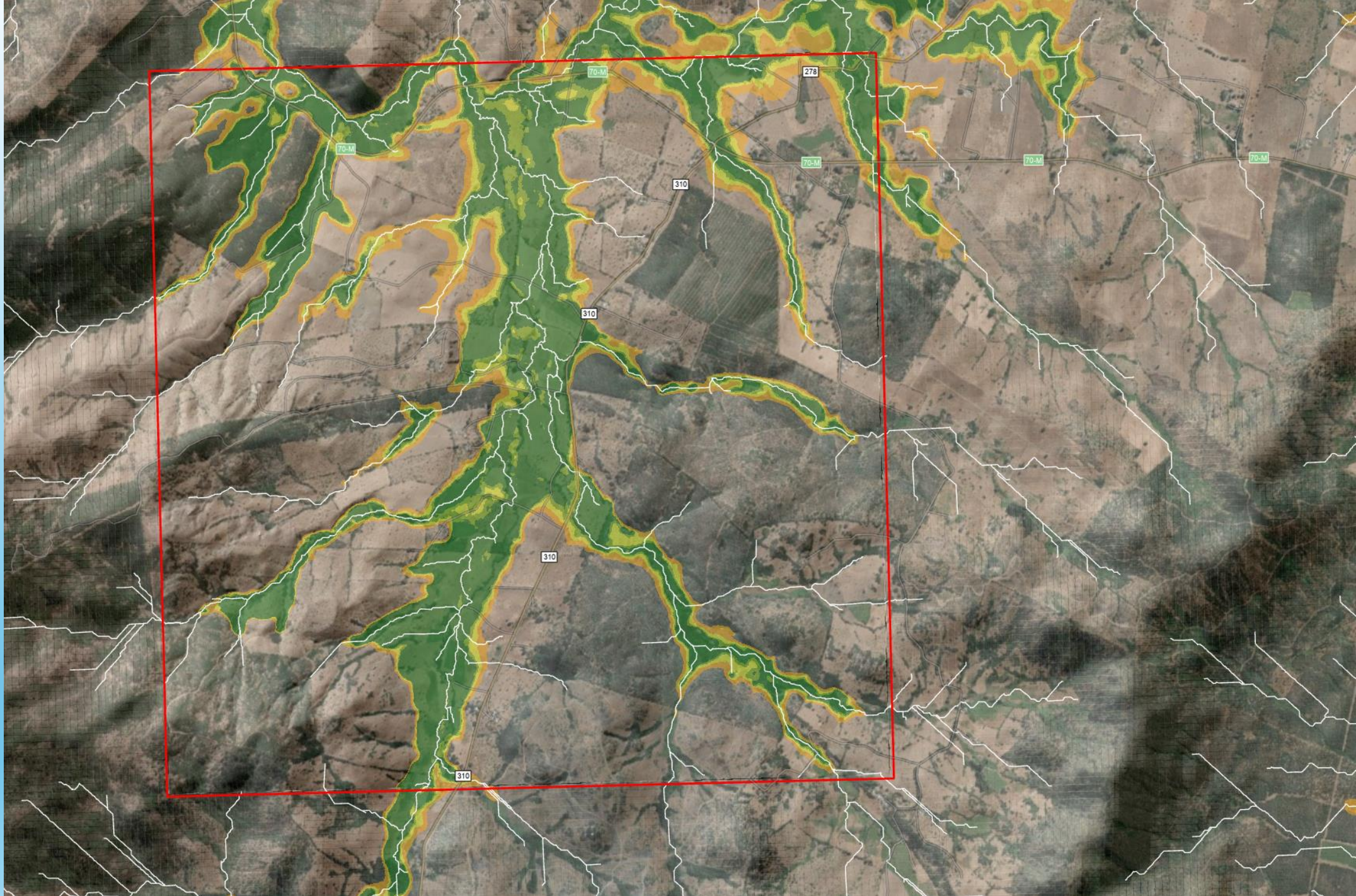


Lamaravilla

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Lamaravilla

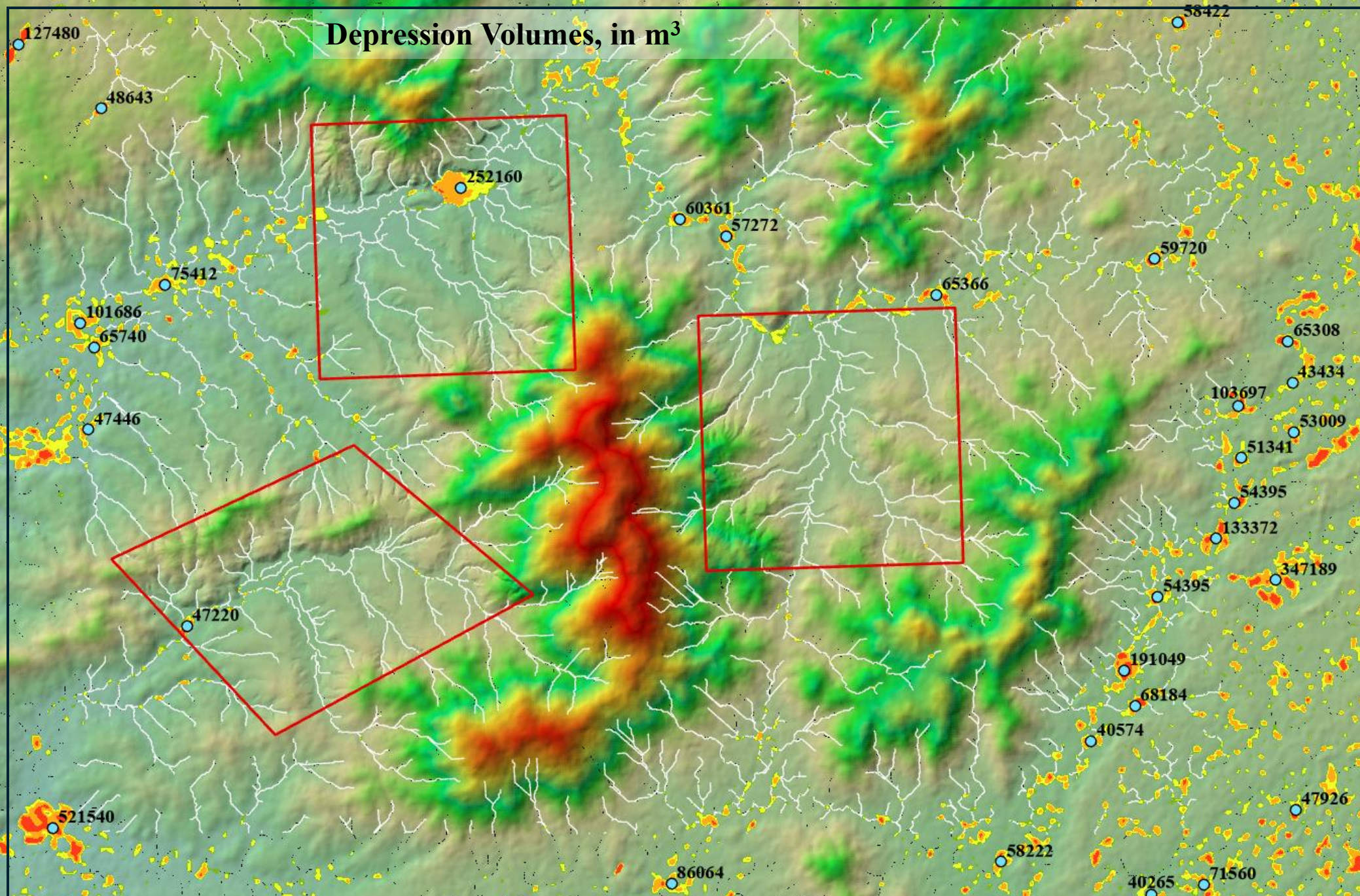
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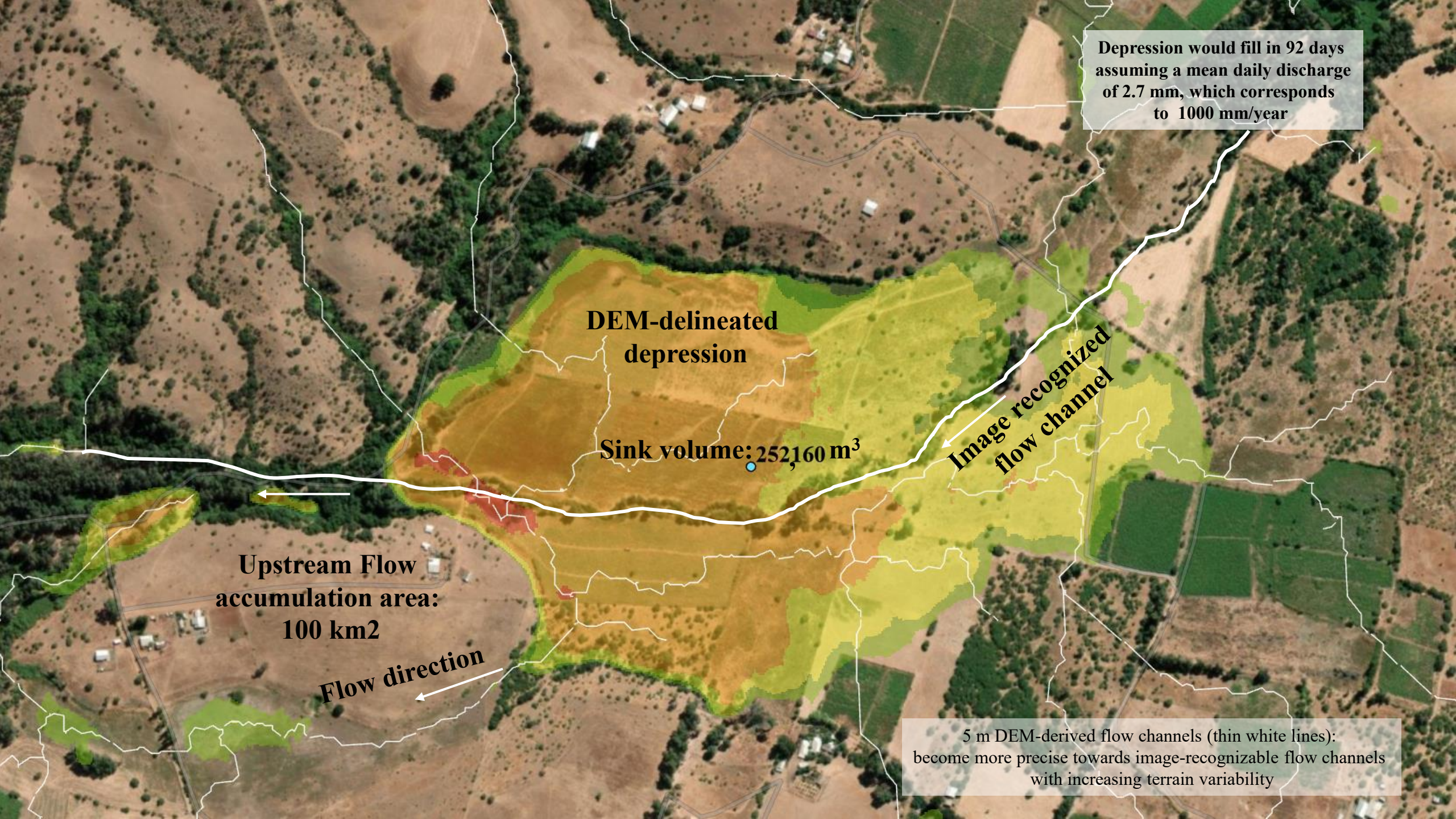
also showing
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World image



Depression Volumes, in m³





Depression would fill in 92 days assuming a mean daily discharge of 2.7 mm, which corresponds to 1000 mm/year

DEM-delineated depression

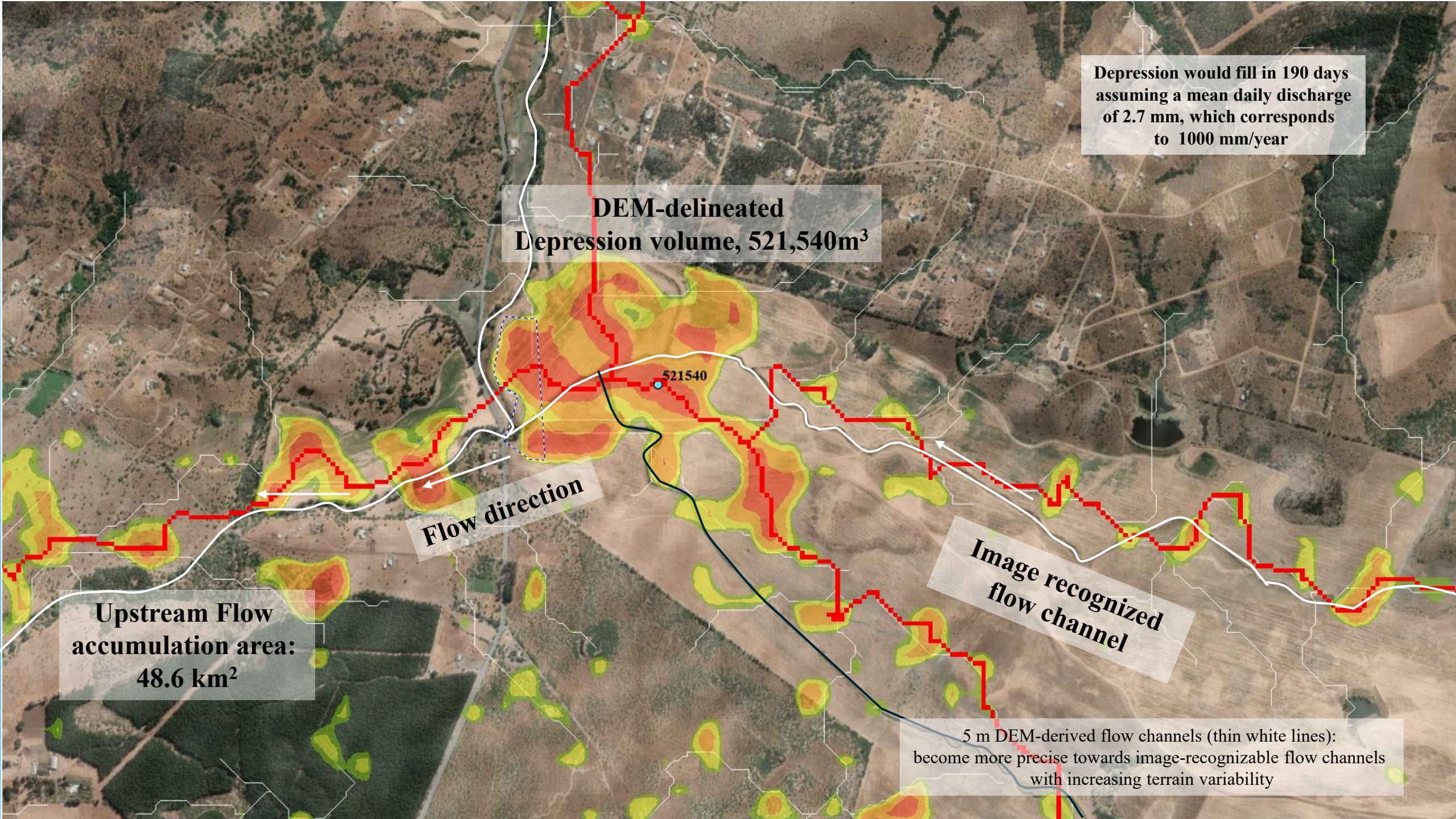
Sink volume: 252,160 m³

Image recognized flow channel

Upstream Flow accumulation area: 100 km²

Flow direction

5 m DEM-derived flow channels (thin white lines): become more precise towards image-recognizable flow channels with increasing terrain variability



Depression would fill in 190 days
assuming a mean daily discharge
of 2.7 mm, which corresponds
to 1000 mm/year

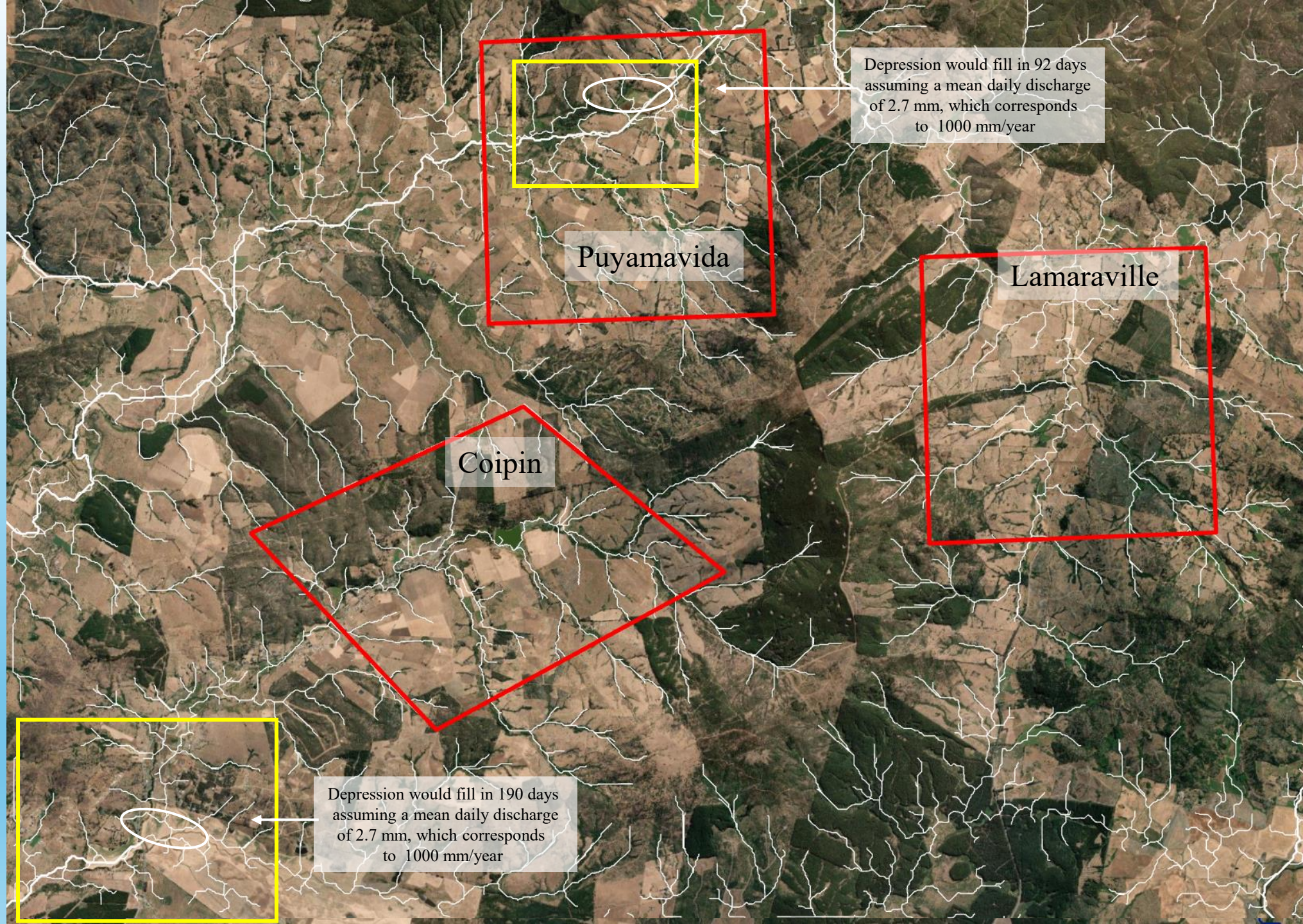
DEM-delineated
Depression volume, 521,540m³

Flow direction

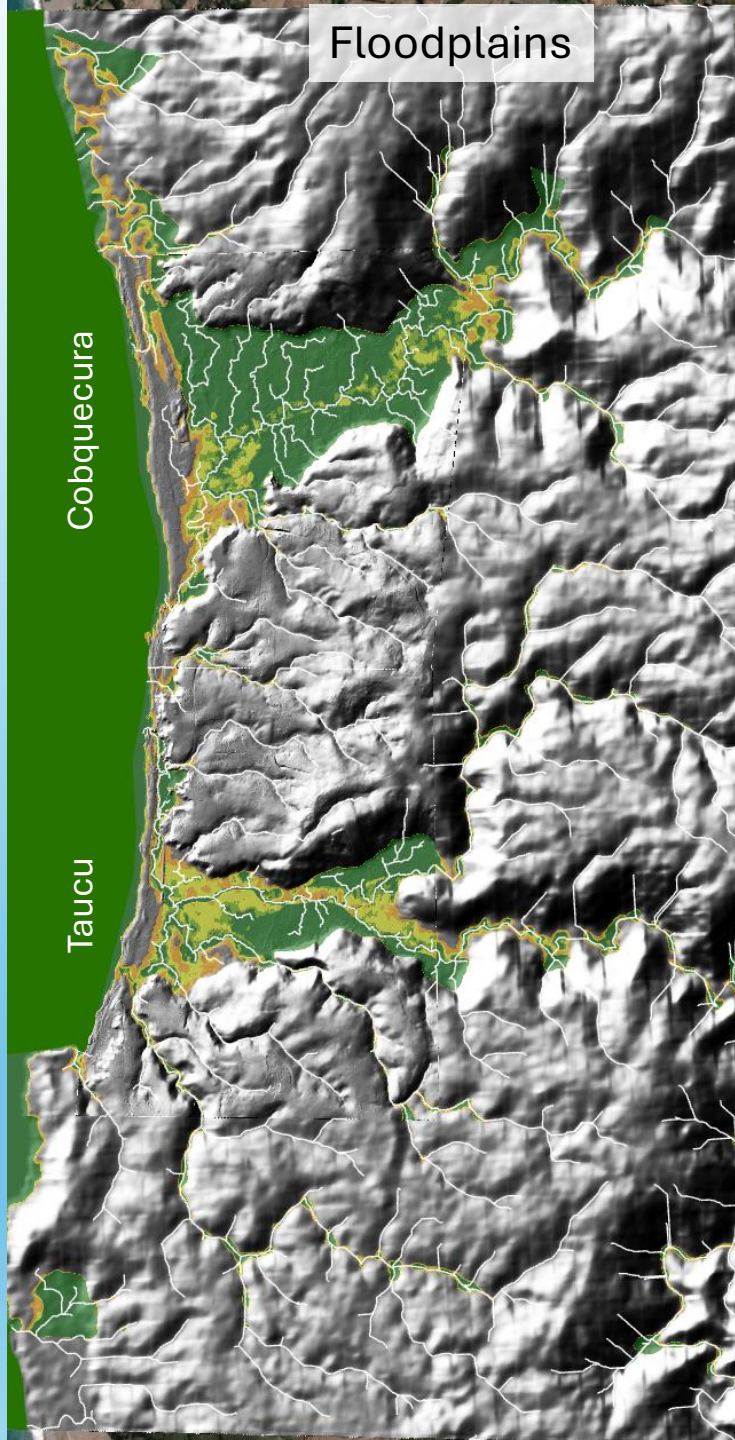
Upstream Flow
accumulation area:
48.6 km²

Image recognized
flow channel

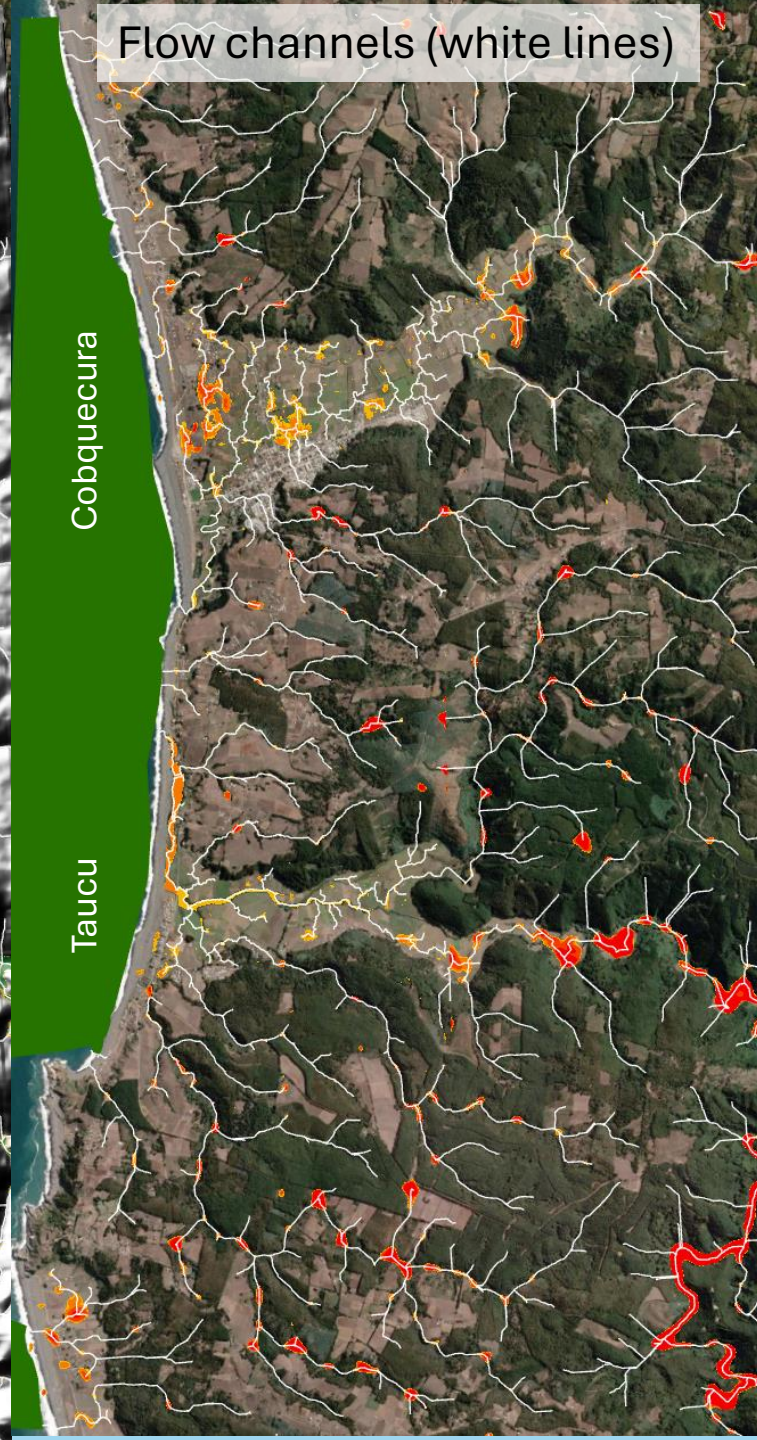
5 m DEM-derived flow channels (thin white lines):
become more precise towards image-recognizable flow channels
with increasing terrain variability



Floodplains



Flow channels (white lines)



Depressions

