# PLAN DE MANEJO DEL BOSQUE DE RIO ABAJO

## Delimitación Regional del Bosque Estatal de Río Abajo

## Resultados de la Metodología Aplicada con Arc Hydro

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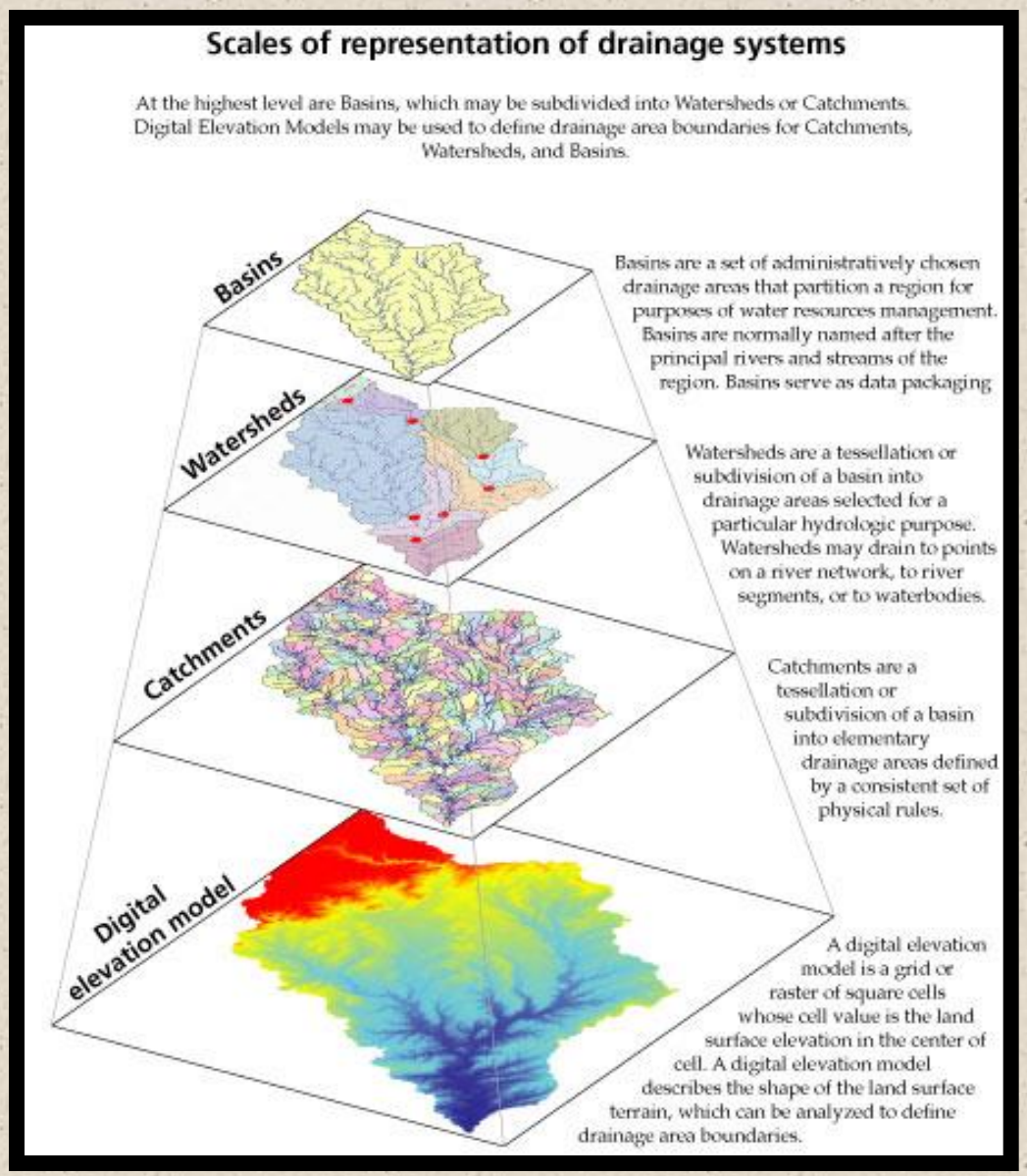
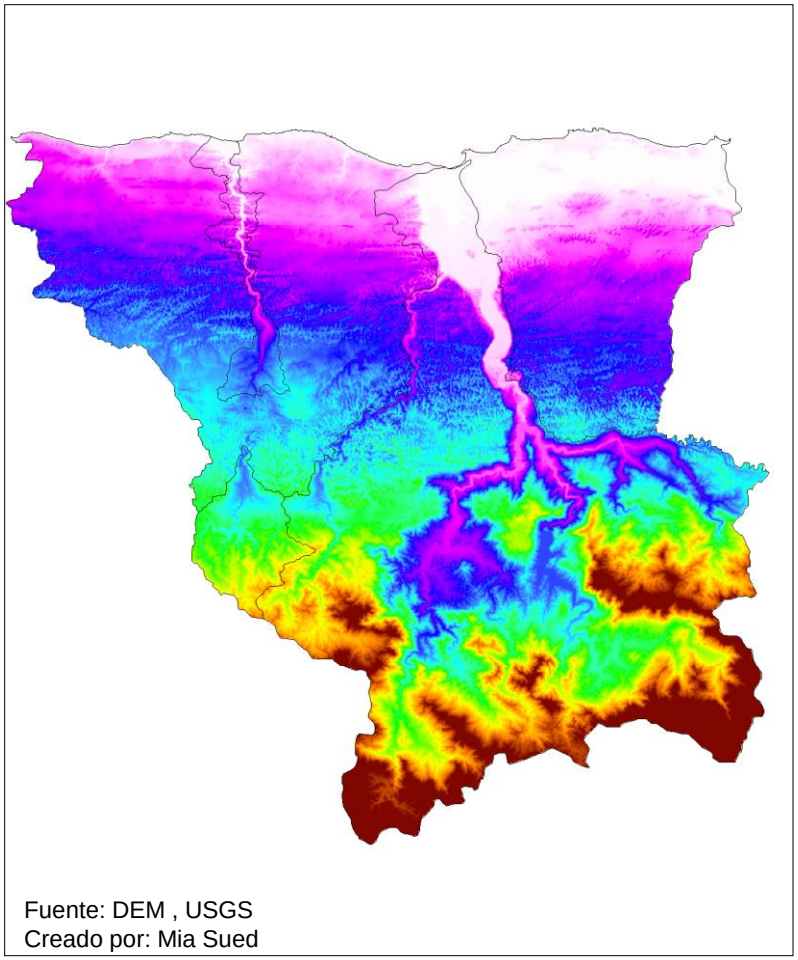
Negociado del Servicio Forestal
DRNA, 2003-2004

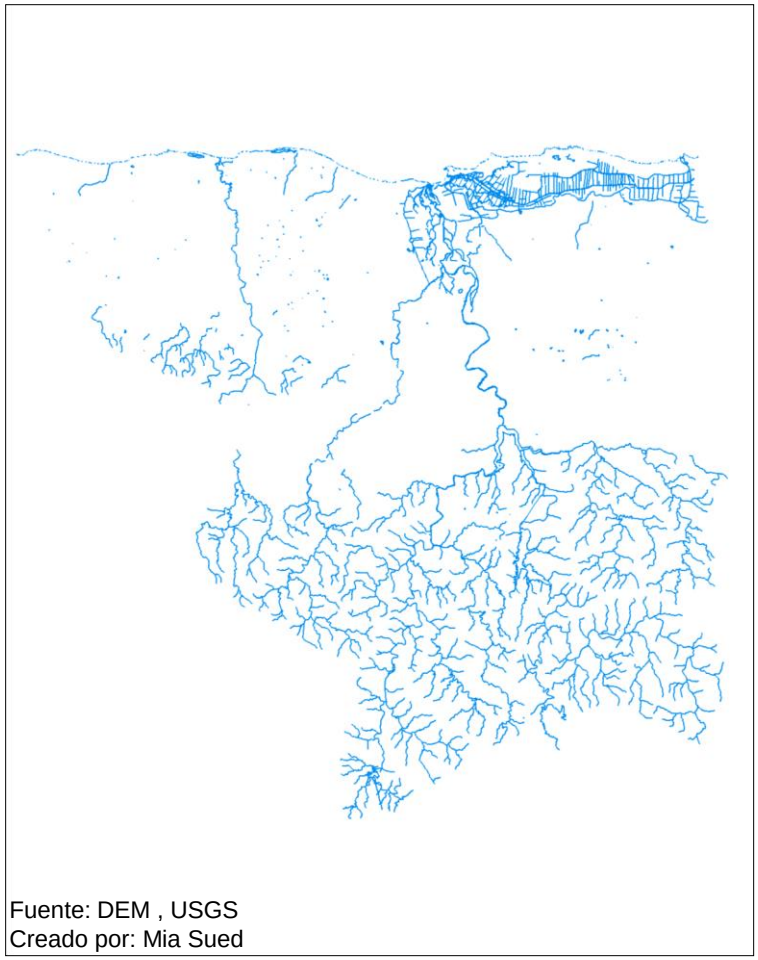
# ARC HYDRO COMO MARCO CONCEPTUAL PARA LA DELIMITACIÓN REGIONAL DEL BOSQUE DE RÍO ABAJO



# Mapas Base para el Análisis en ArcHydro, ArcGIS.

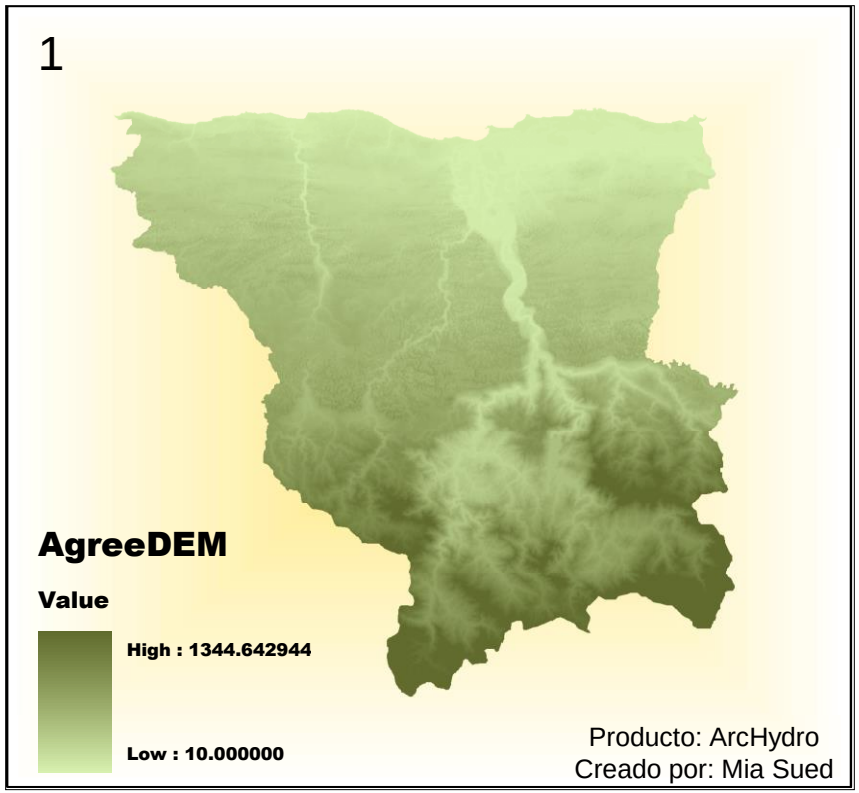


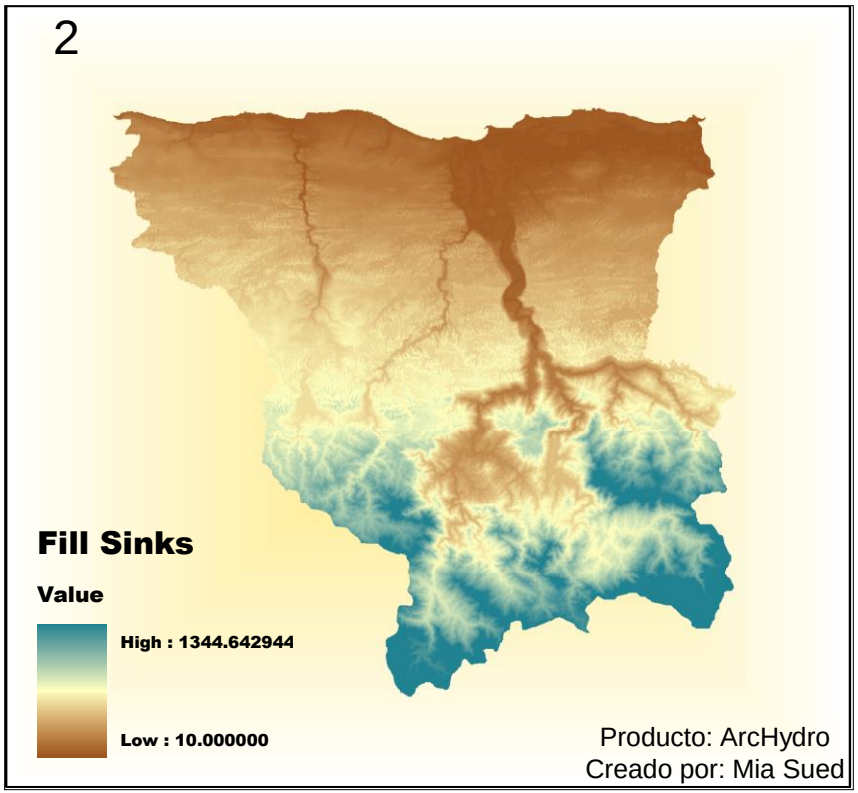

**Modelo de Elevación Digital**




**Red Hidrológica de la cuenca del Río Camuy y Río Grande de Arecibo**

# TERRAIN PREPROCESSING



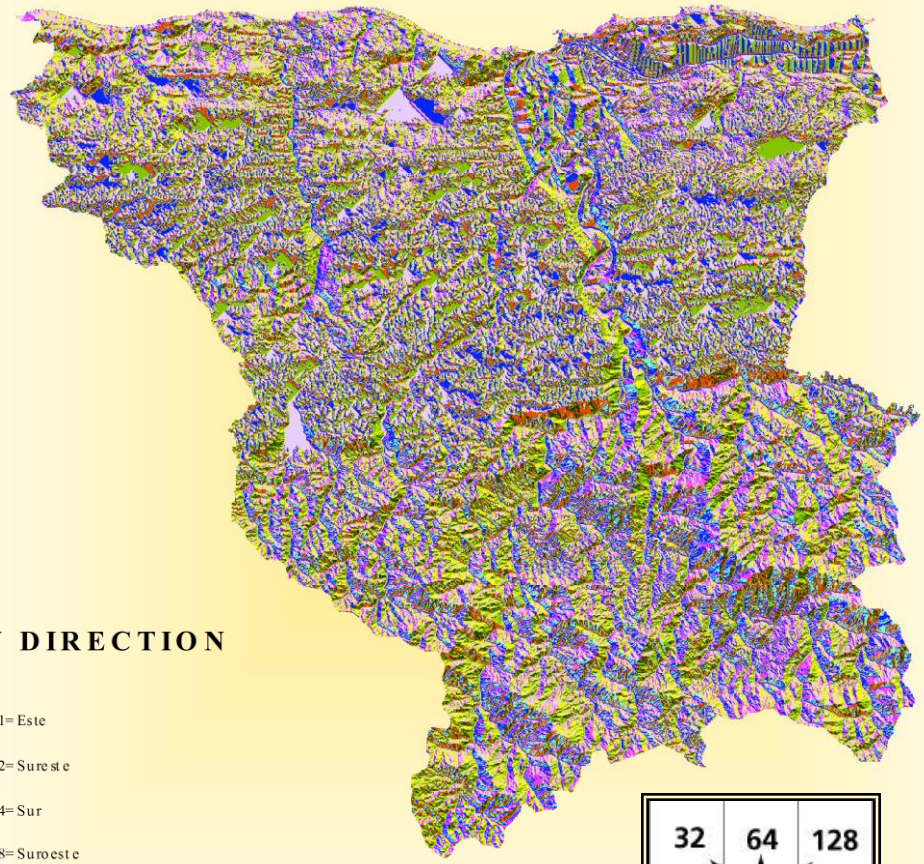




**AGREE DEM**

**FILL SINKS**

3

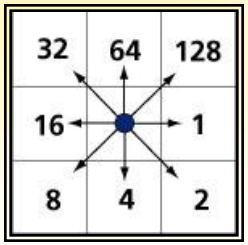
# FLOW DIRECTION



**FLOW DIRECTION**

**Valores**

- 1= Este
- 2= Sureste
- 4= Sur
- 8= Suroeste
- 16=Oeste
- 32=Noroeste
- 64=Norte
- 128=Noreste




**Modelo de flujo de 8 direcciones**

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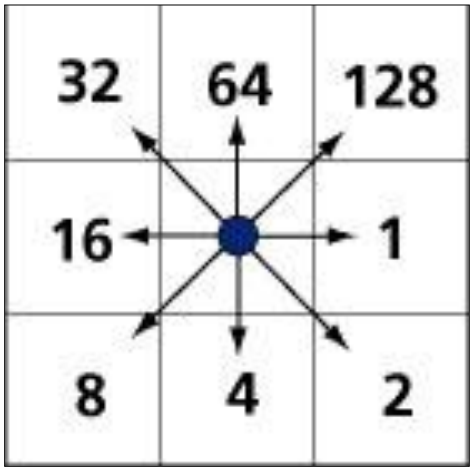
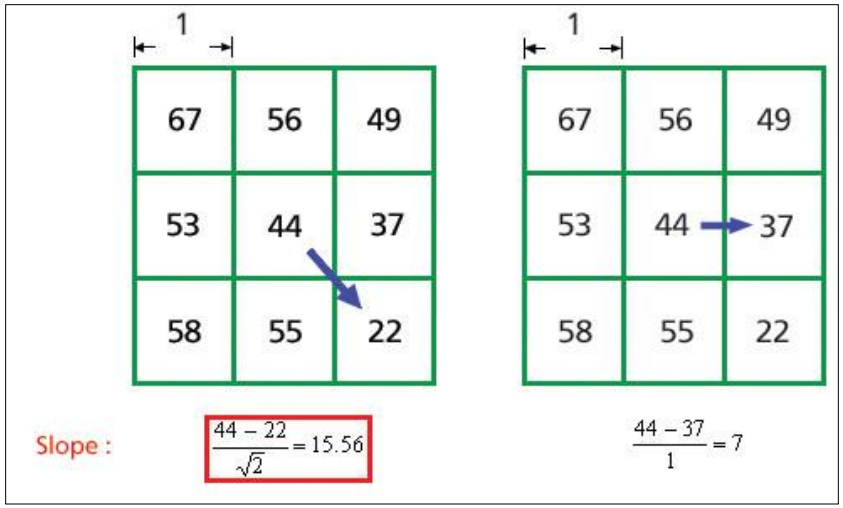
# Modelo matemático que utiliza ARC HYDRO

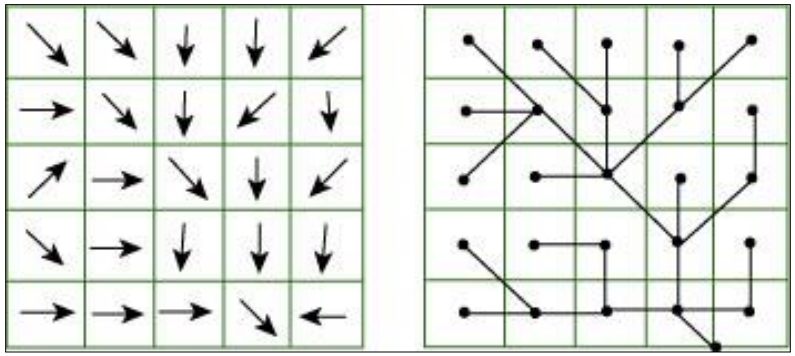
Hacia dónde fluye la gota de lluvia?




Flow direction in the eight-direction pour point model



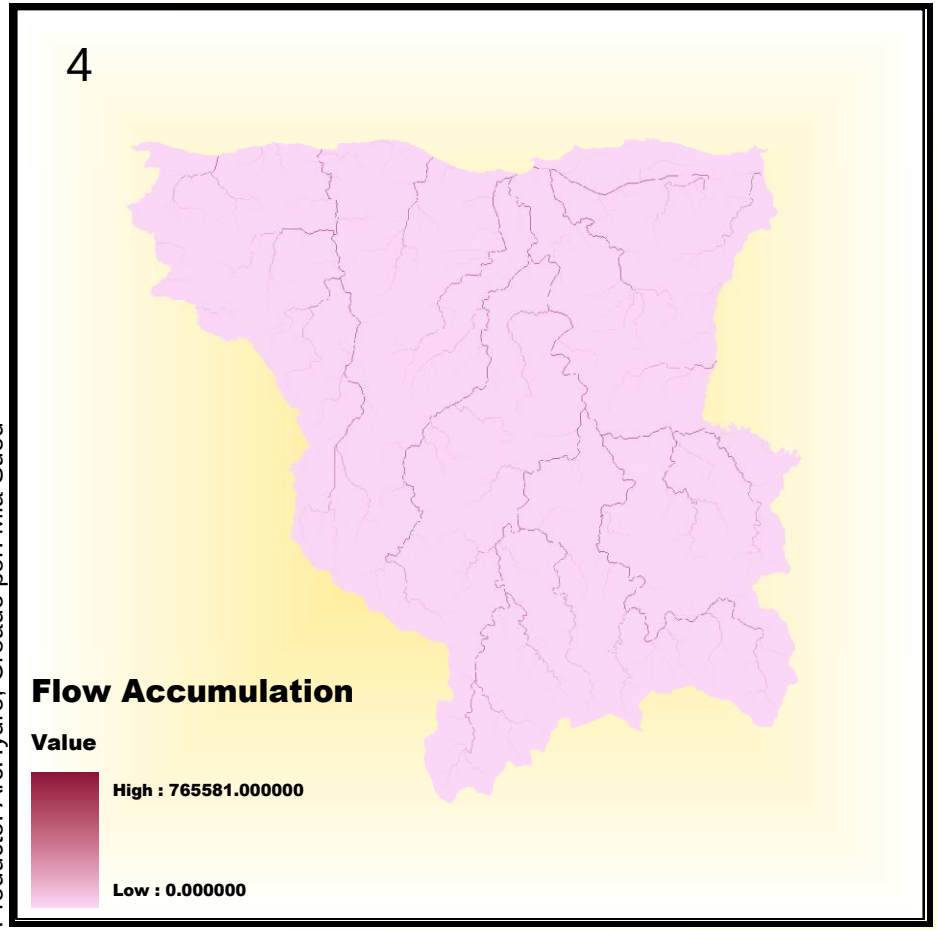

Slope calculation with the eight direction pour point model.



Physical representation of flow direction

# Procesamiento de la Red Hidrológica

## FLOW ACCUMULATION

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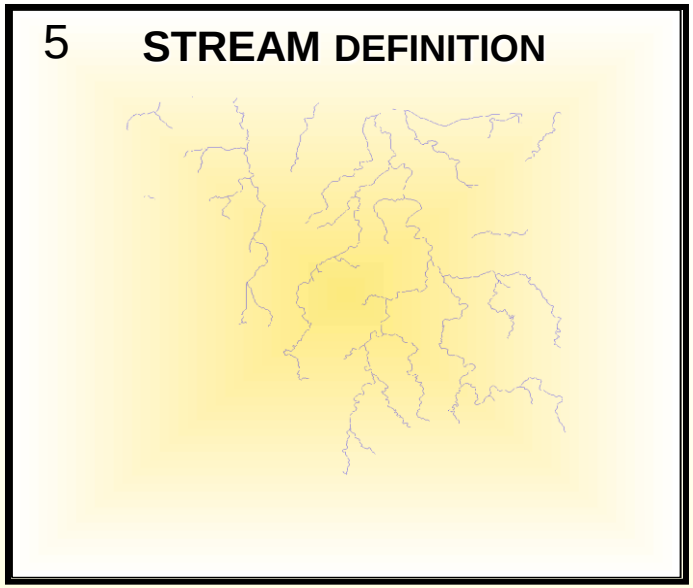
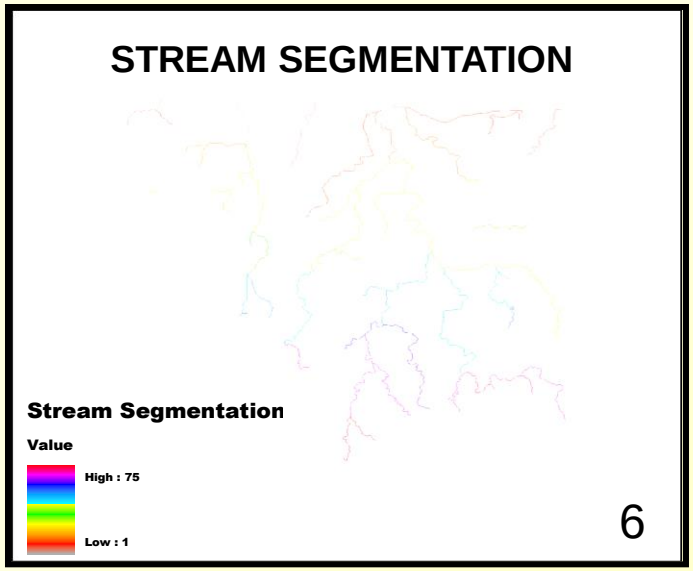
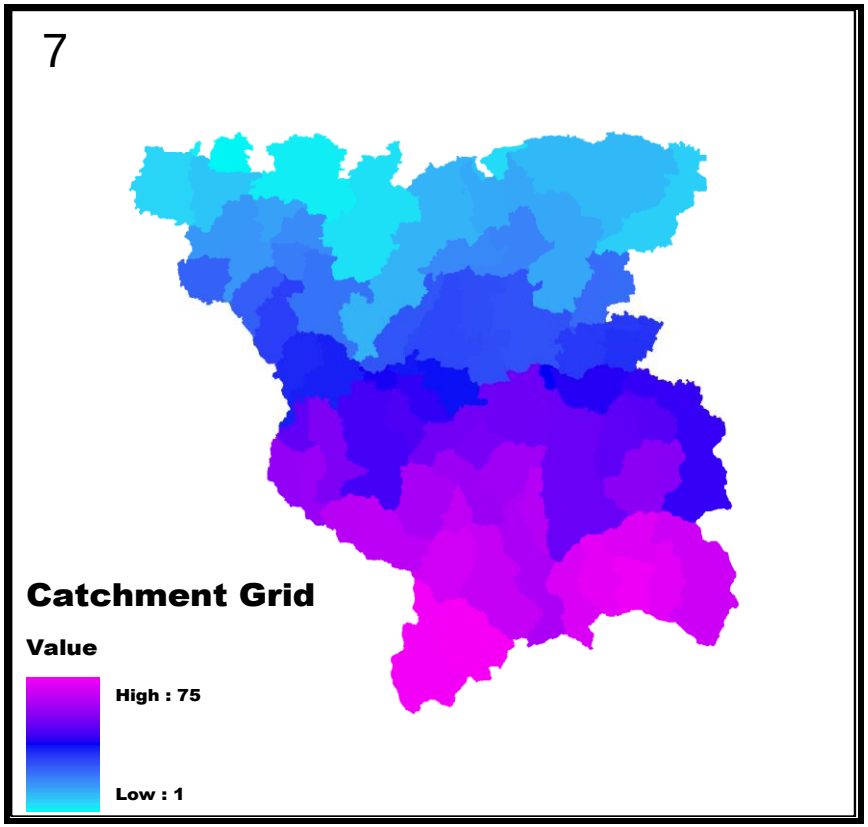
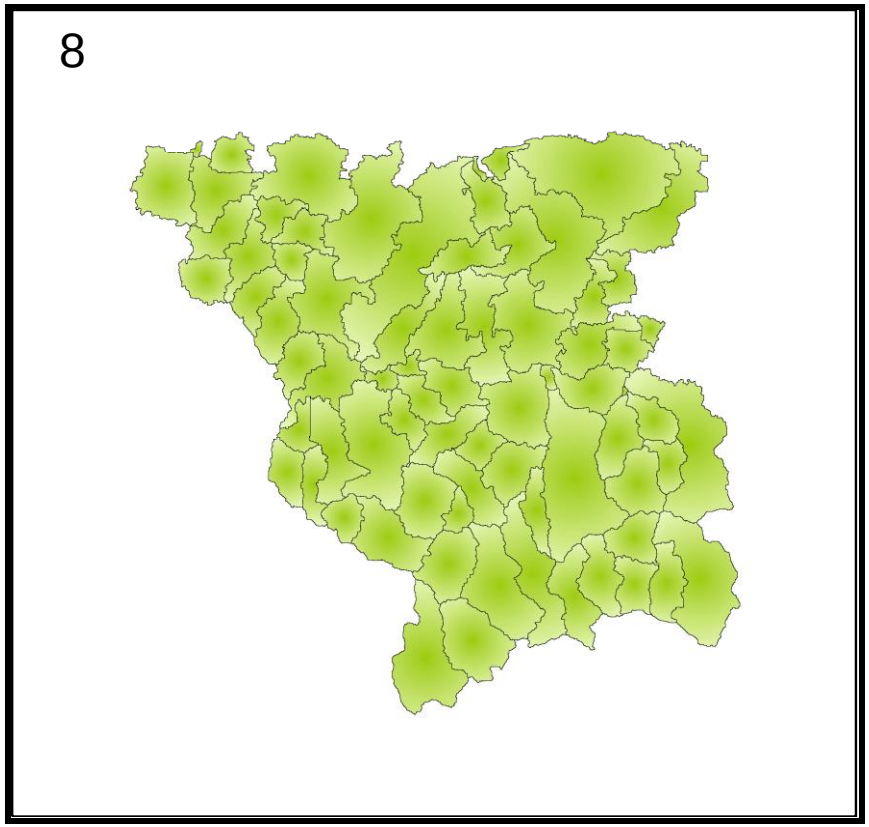


# Catchment




CATCHMENT GRID DELINEATION




CATCHMENT POLYGON PROCESSING

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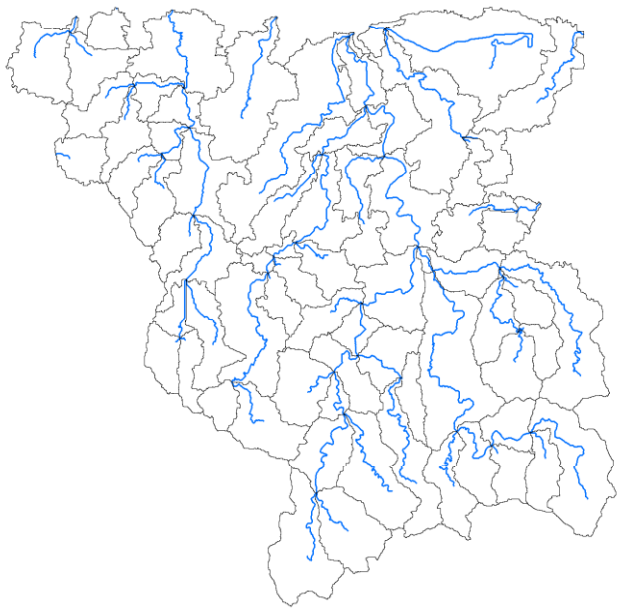

**DRAINAGE LINE PROCESSING**

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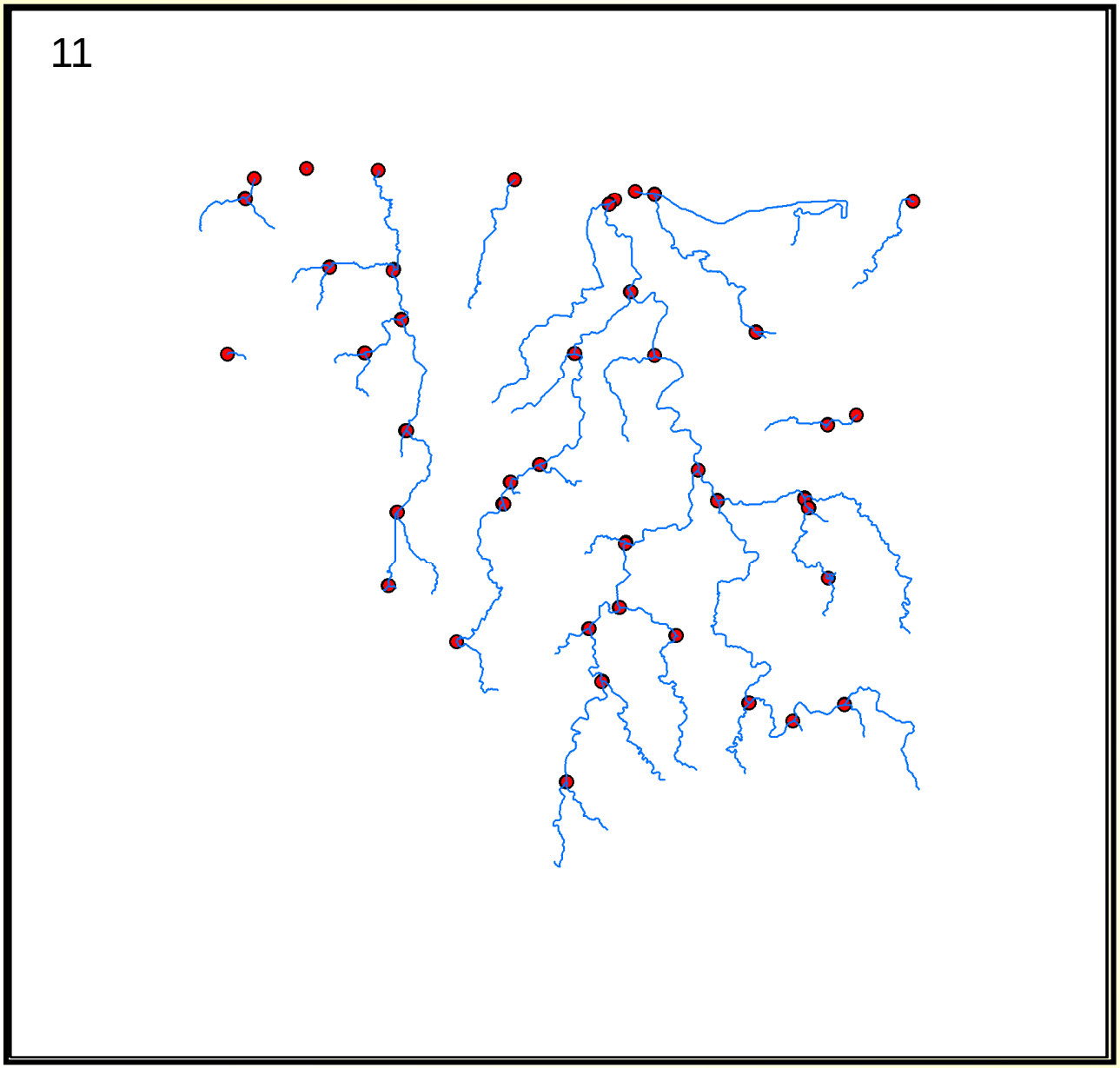
**ADJOINT CATCHMENT PROCESSING**

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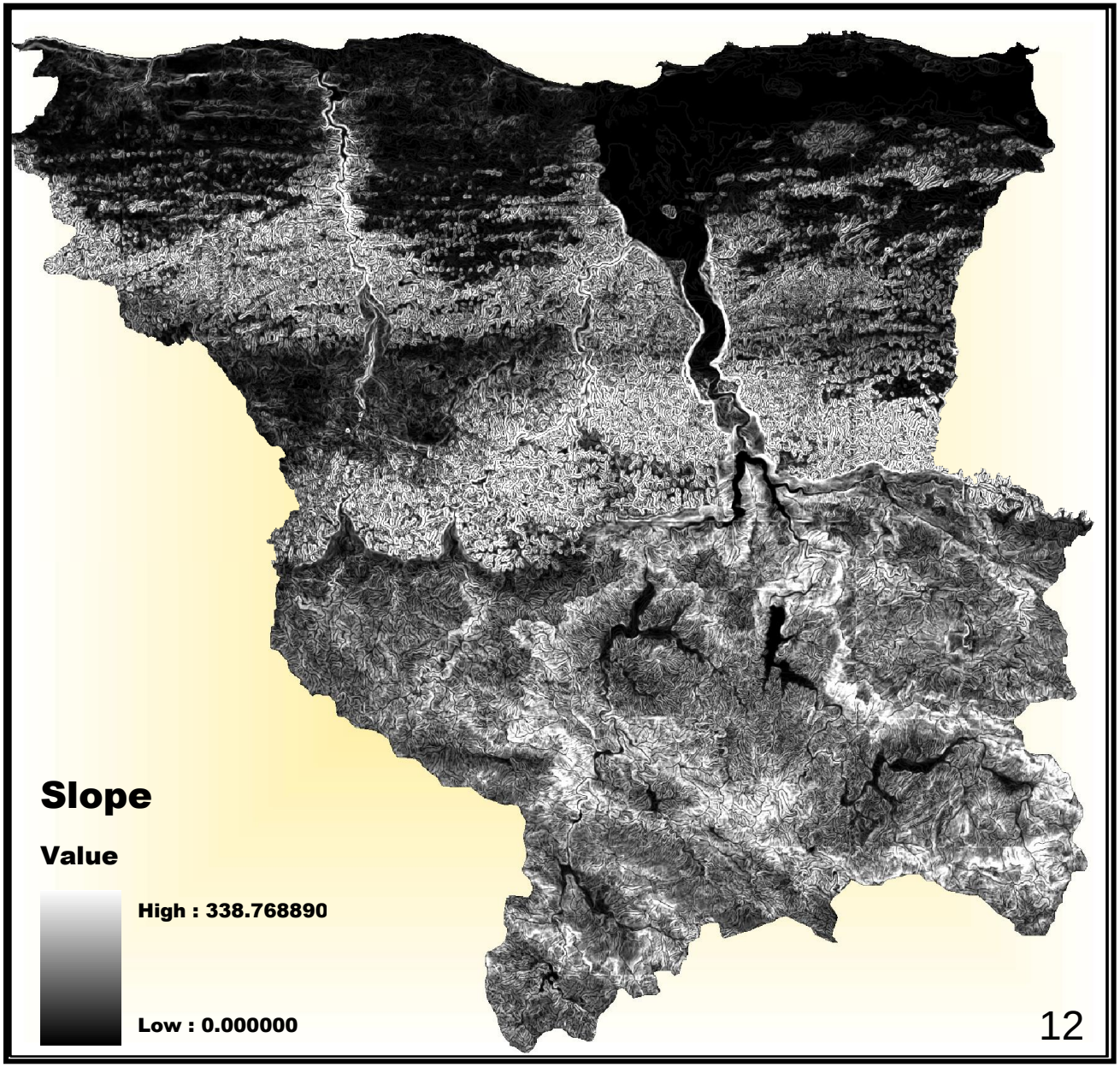
**DRAINAGE POINT PROCESSING**

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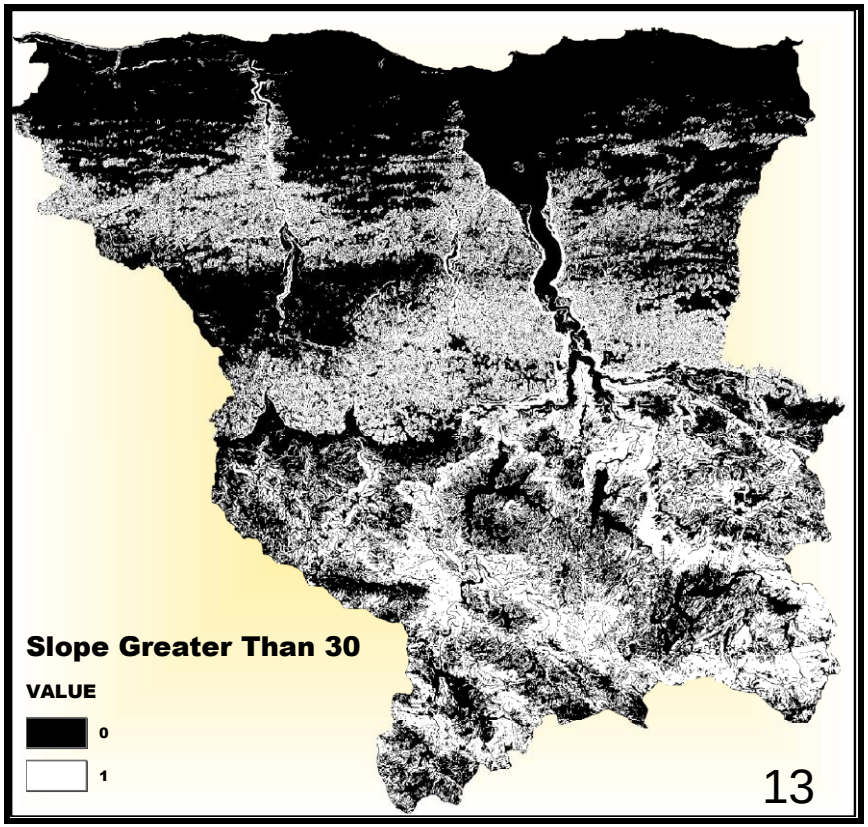
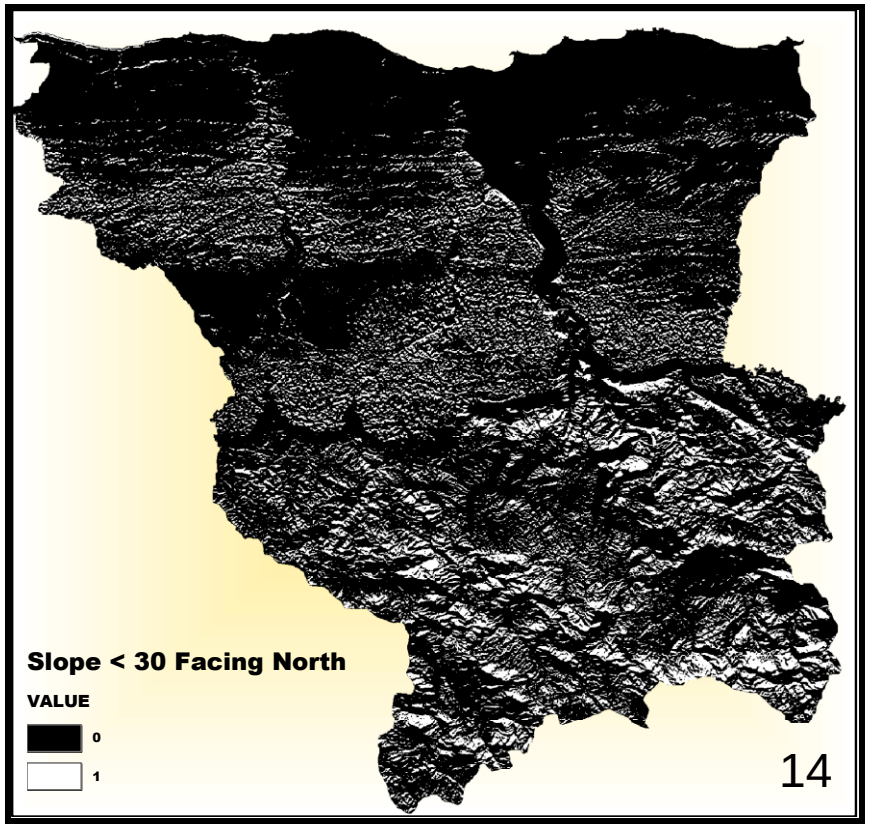
**SLOPE**

# Slope

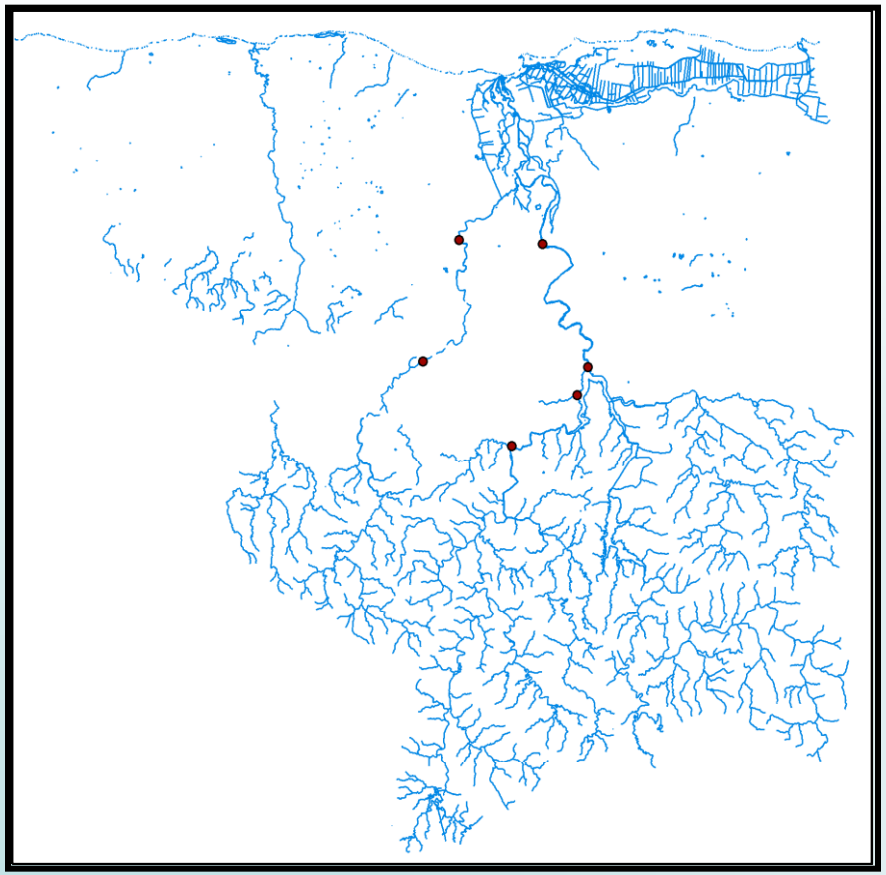



**SLOPE GREATER THAN 30**

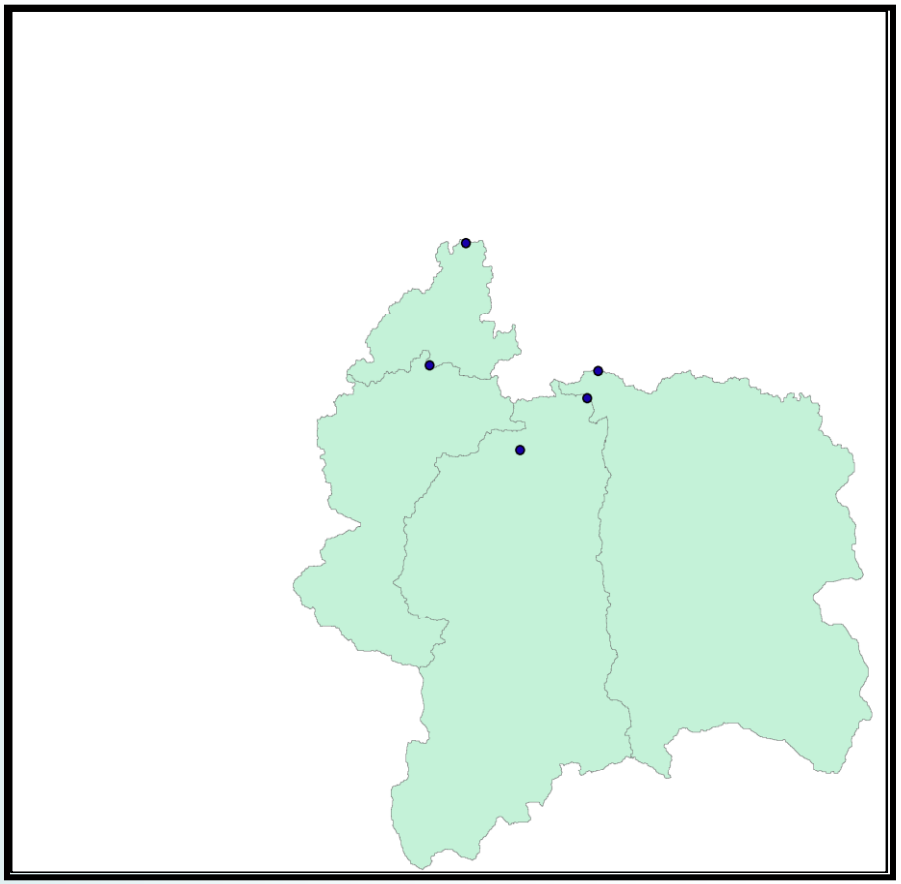



**SLOPE GREATER THAN 30 AND FACING NORTH**

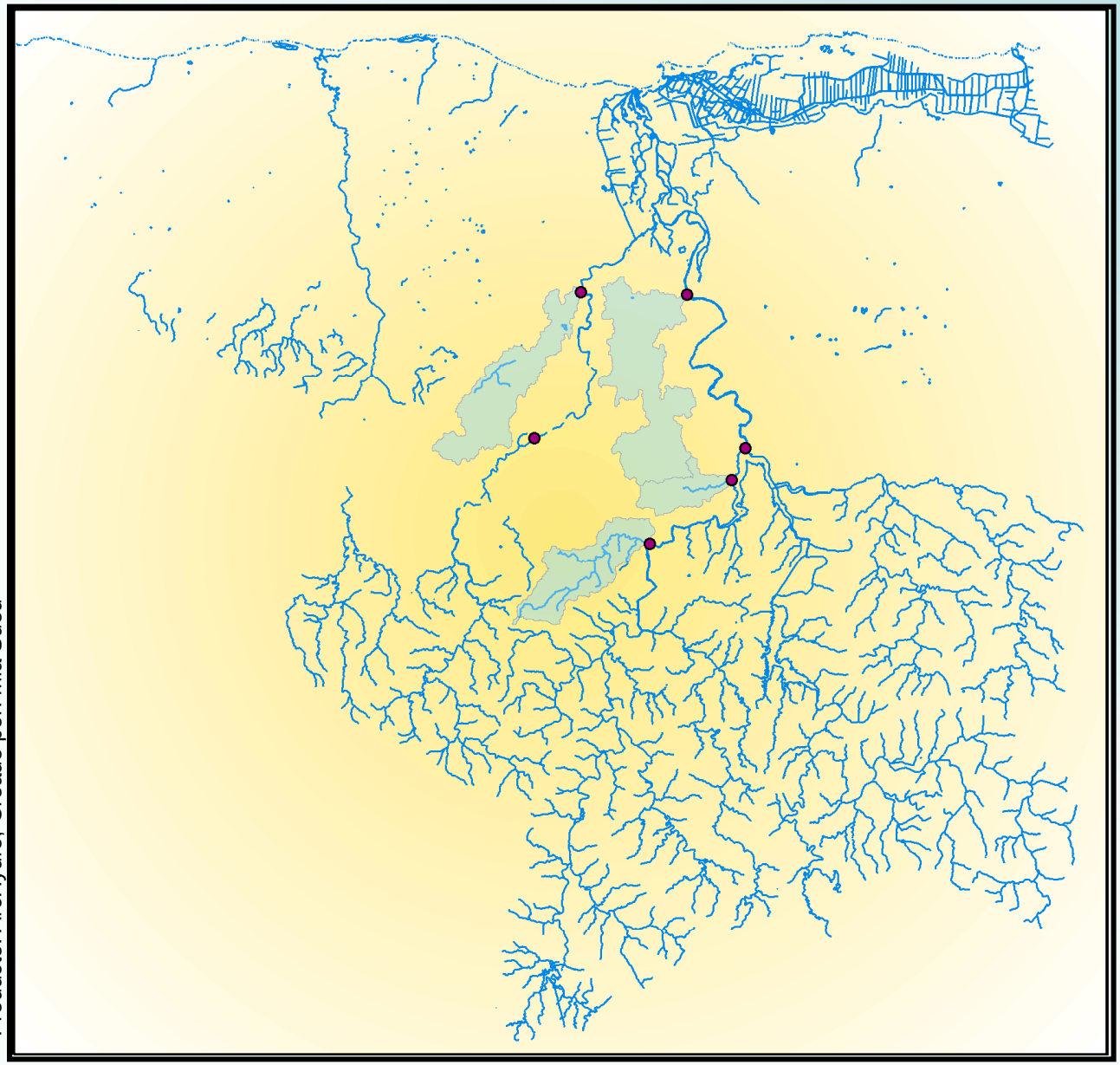
# WATERSHED PROCESSING



BATCH WATERSHED DELINEATION



WATERSHED POINT AND WATERSHED



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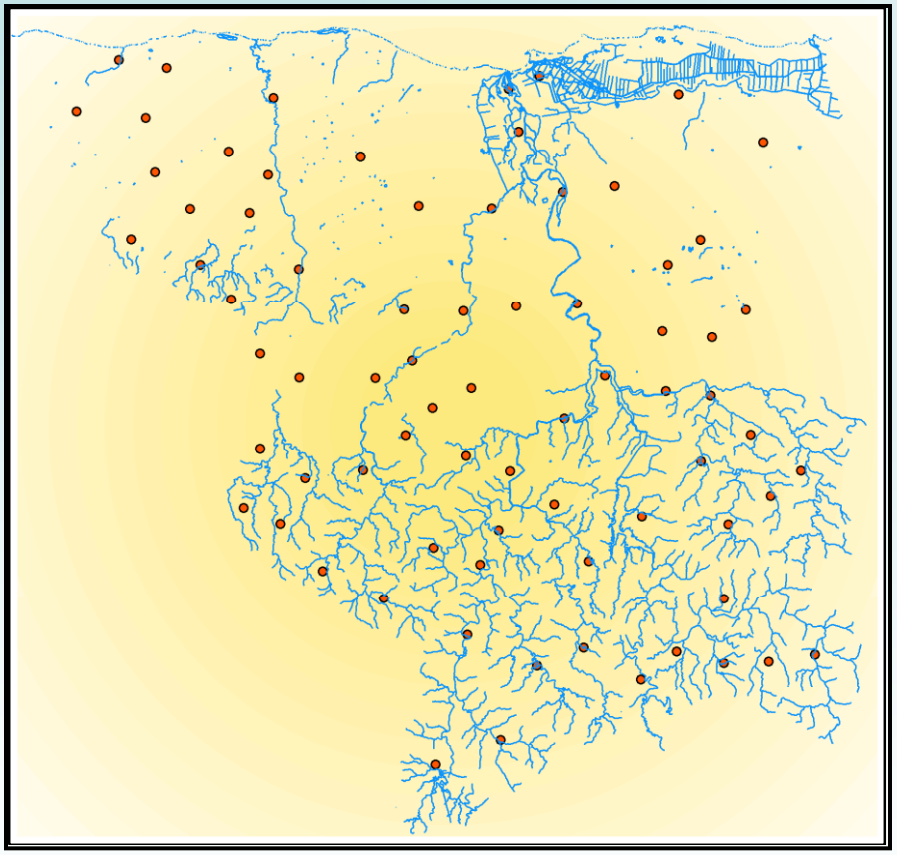
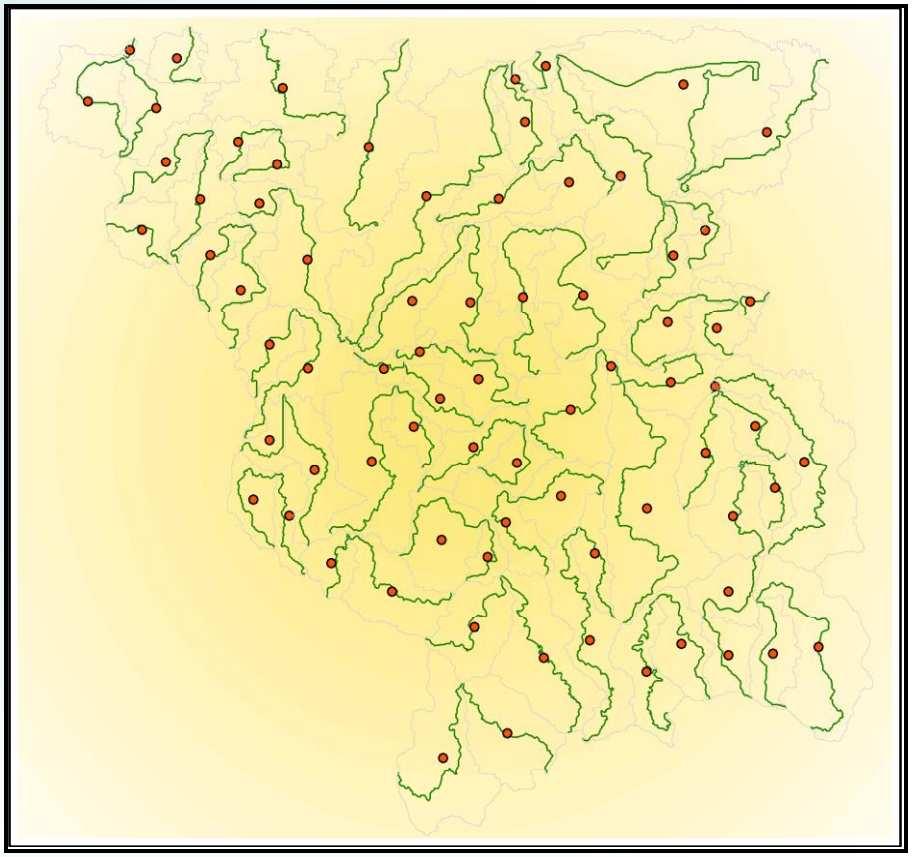
# BATCH SUBWATERSHED DELINEATION

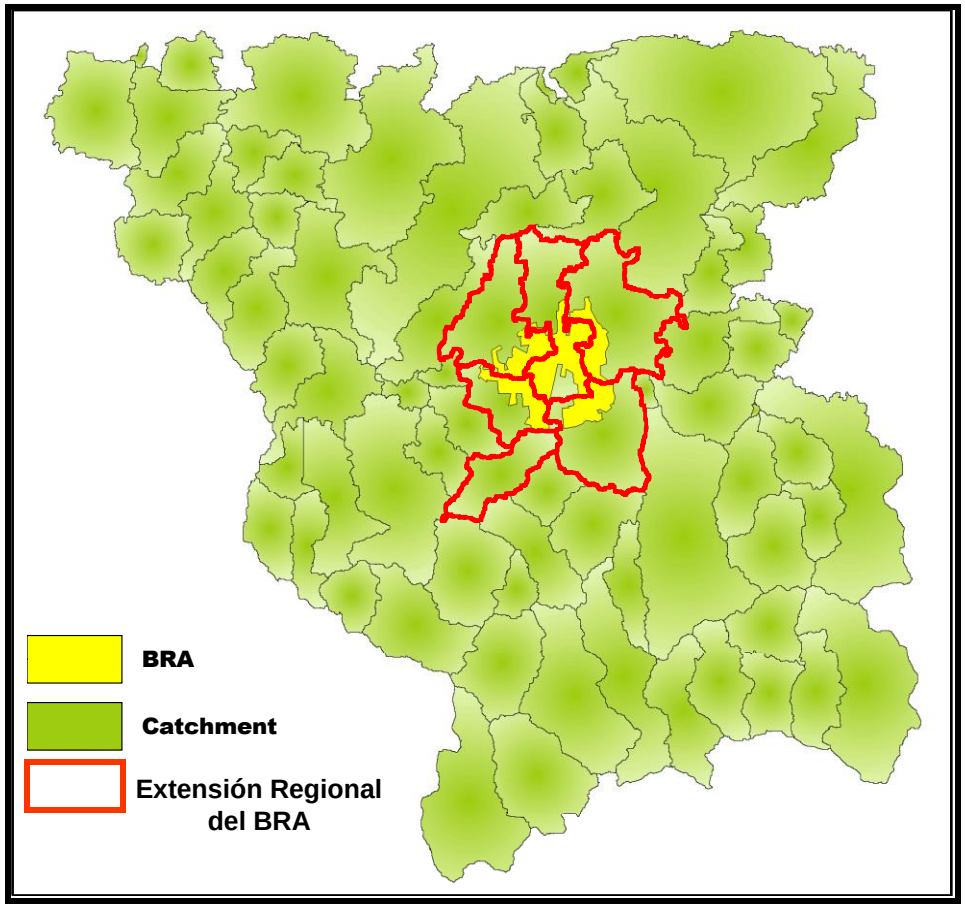


DRAINAGE ÁREA CENTROID

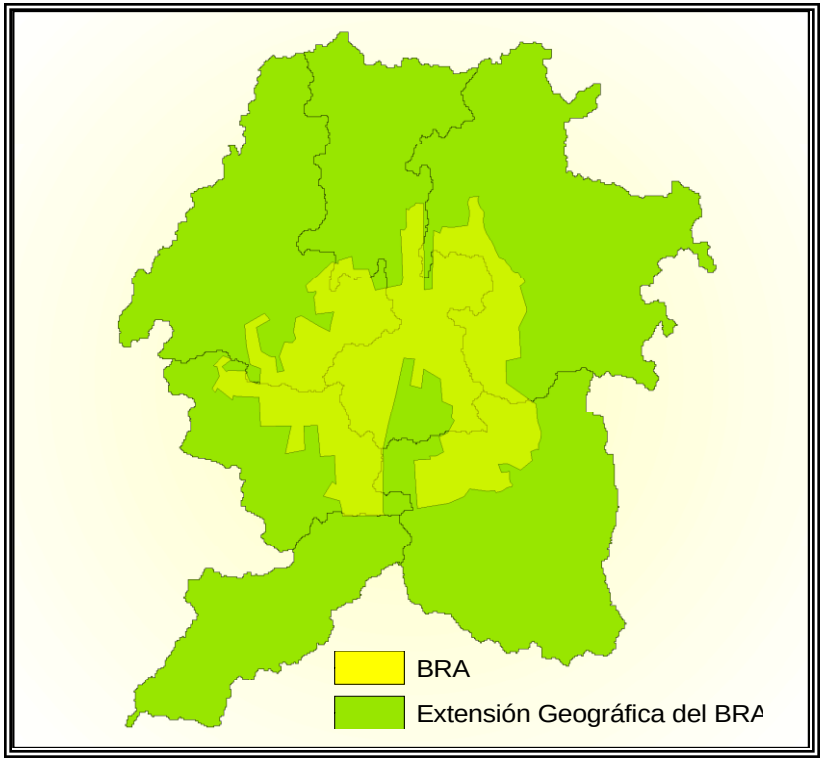


LONGEST FLOW PATH

# EXTENSIÓN GEOGRÁFICA DEL BOSQUE DE RÍO ABAJO

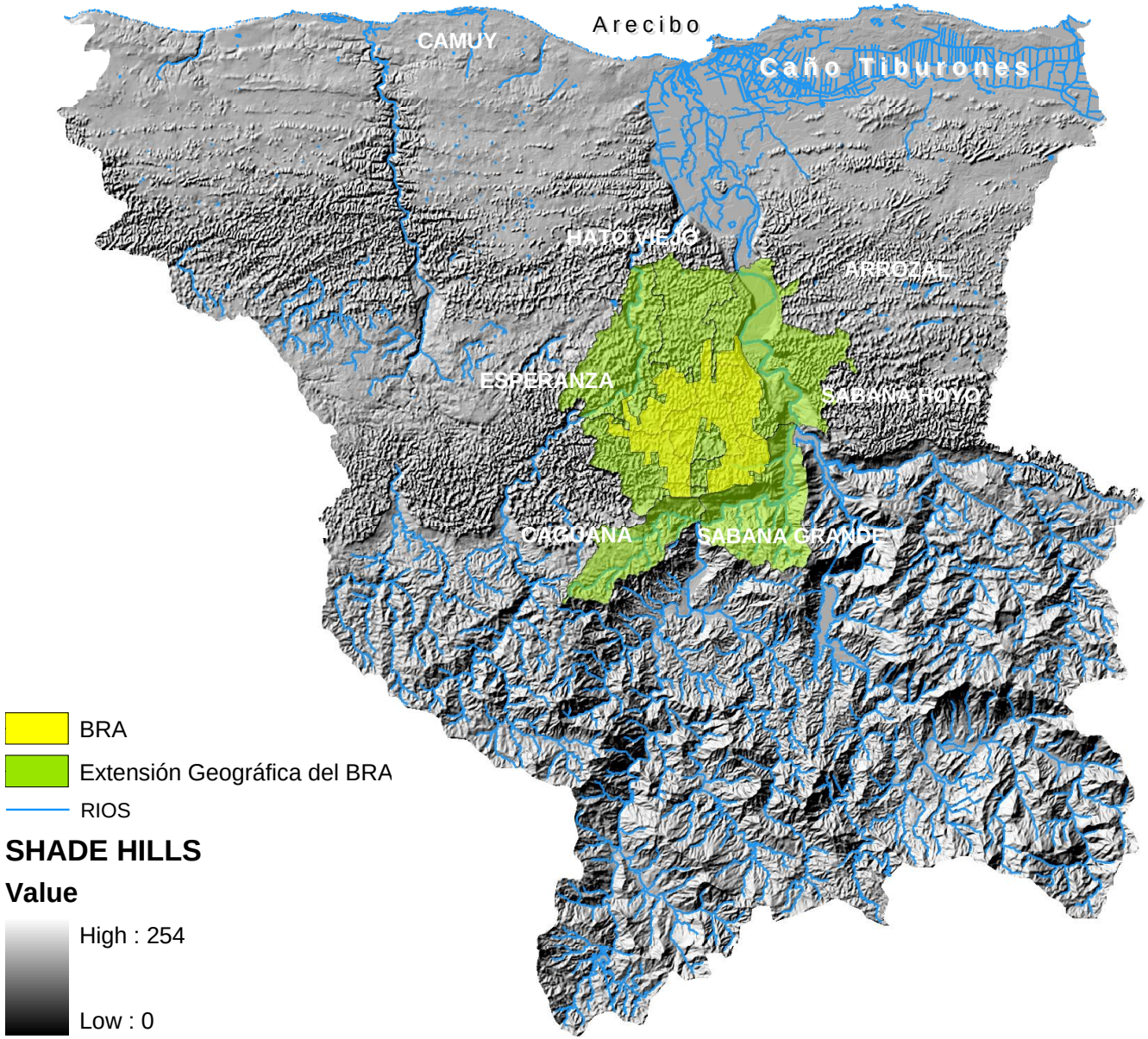



La Cuenca del Río Grande de Arecibo y Camuy se subdivide en 75 áreas de drenaje (catchment), de éstas, 6 son las que delimitan el área del Bosque de Río Abajo.




Delimitación Regional de las Subcuencas del Bosque de Río Abajo.

# EXTENSIÓN GEOGRÁFICA

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# Análisis que podemos Realizar

- **Análisis con Arc Hydro**: Hidrologia, Precipitación (data Internet), Puntos de Monitoreo (Ej: calidad de agua), digitalización de ríos, cuerpos de agua, etc.

- **Otros análisis**: GPS (puntos de monitoreo sobre la dispersión de la cotorra, áreas de anidaje, etc.), Datos poblacionales, Remote Sensing (ej: análisis de cambios de usos del suelo por subcuencas), Geología, Áreas naturales, rurales o urbanas vulnerables o en riesgo a X eventos (naturales o antrópicos), entre otros.