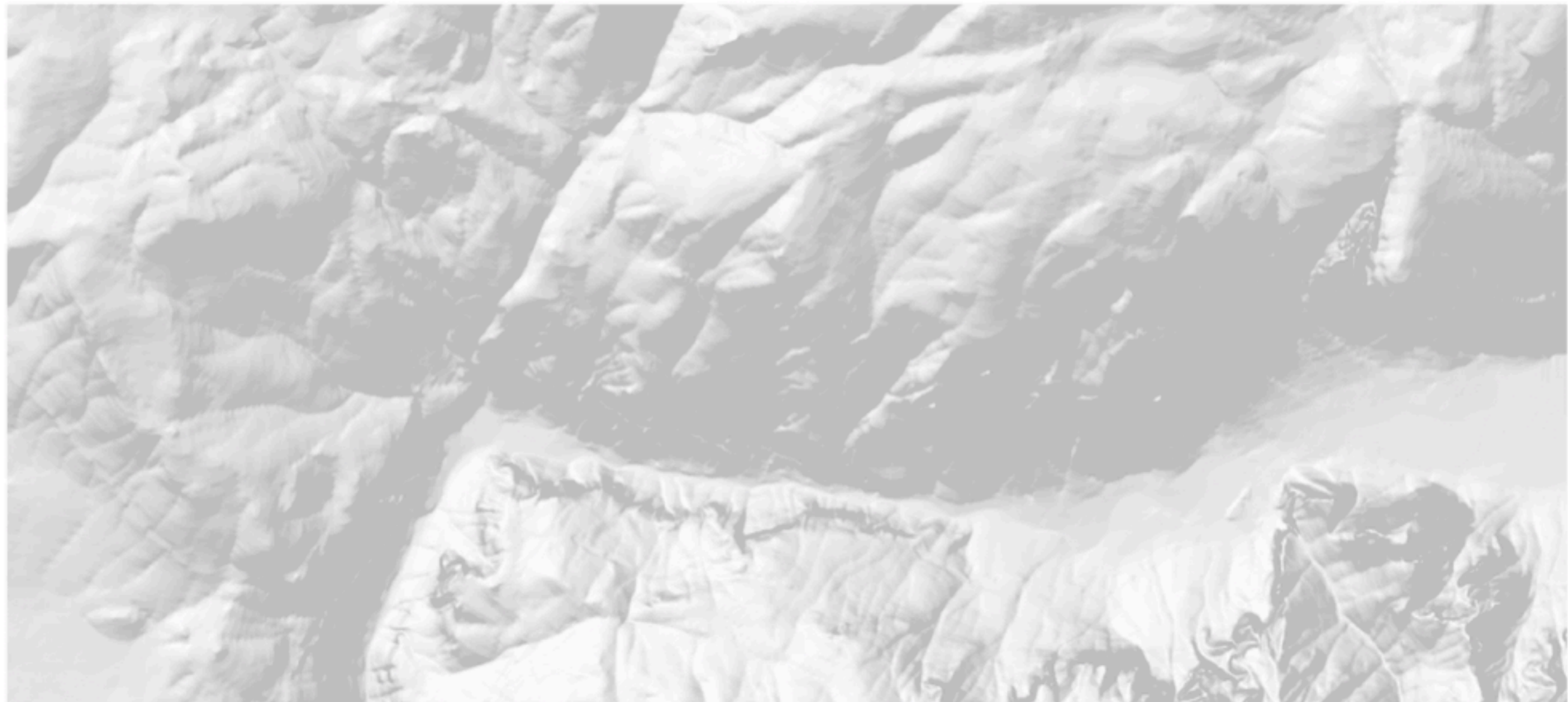**USGS**
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

EL CAPITAN QUADRANGLE
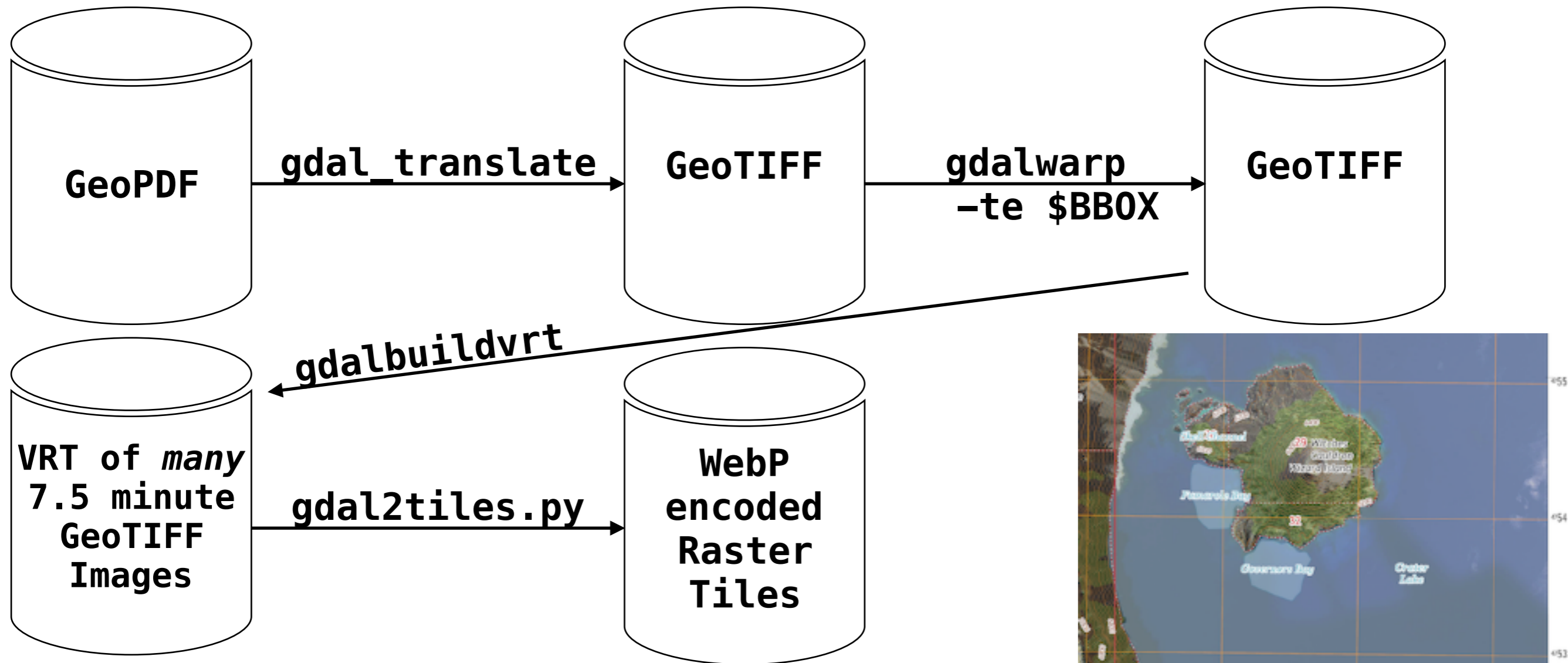CALIFORNIA-MARIPOSA CO.
7.5-MINUTE SERIES

Rendering Raster Data

- Raster data is `tiled` and compressed with WebP
- WebP compress many times smaller when compared to PNG
- https://developers.google.com/speed/webp
- Tiling is performed with the GDAL suite of tools from OSGEO, `gdal2tiles.py`

e π Map Pipeline for Raster

Hill Shade & Orthoimage Rasters from USGS GeoPDFs

GeoPDF → `gdal_translate` → GeoTIFF → `gdalwarp -te $BBOX` → GeoTIFF

GeoTIFF → `gdalbuildvrt` → VRT of *many* 7.5 minute GeoTIFF Images

VRT of *many* 7.5 minute GeoTIFF Images → `gdal2tiles.py` → WebP encoded Raster Tiles

Working examples on how to extract Images from GeoPDF

`http://RobLabs.com/gdal-geopdf`

USGS
science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

EL CAPITAN QUADRANGLE
CALIFORNIA-MARIPOSA CO.
7.5-MINUTE SERIES

Rendering Raster Data

- Raster data is `tiled` and compressed with WebP
- WebP compress many times smaller when compared to PNG
- https://developers.google.com/speed/webp
- Tiling is performed with the GDAL suite of tools from OSGEO, `gdal2tiles.py`