

## Tilesets — Google Earth

# View Geodata using Your Custom Terrain

The Export Google Earth 3D Tileset process in TNTmips (Tileset / Collada/ Build) allows you to process your custom imagery and high-resolution elevation data for viewing in Google Earth. The process produces a KMZ file containing a tiled set of COLLADA models that incorporate your imagery and terrain data (see the Technical Guide entitled *Tilesets — Google Earth: Overlay Geodata Using a Custom Terrain*). When you open the KMZ file in Google

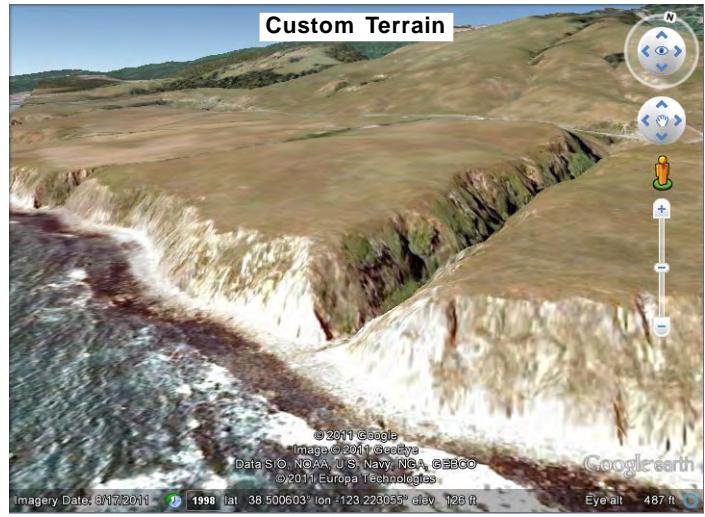
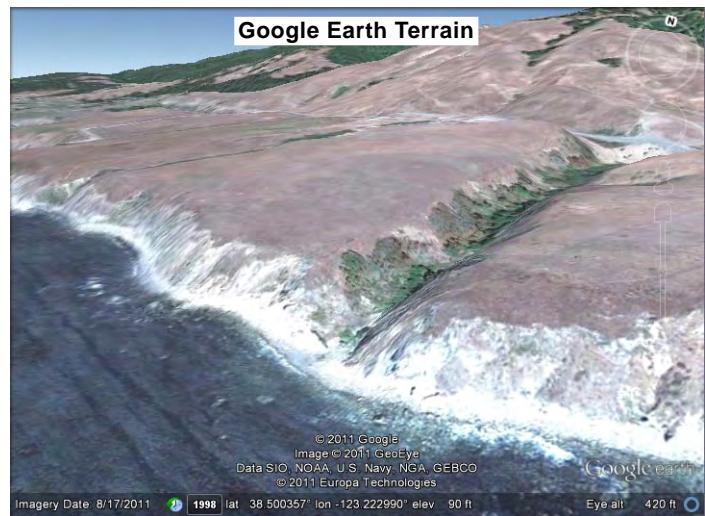
Earth, Google Earth loads the COLLADA models for the current viewing area and view scale, allowing you to view your imagery draped over your detailed custom terrain surface. (When you create the tileset, you can set an elevation offset to raise the models to avoid intersecting with Google Earth's terrain.) Some examples of detailed Google Earth 3D (COLLADA) tilesets are illustrated below and on the reverse.



Google Earth close-up views of an area in the Rocky Mountains of Colorado, USA, showing cliffs along the side of a glacial valley. View on the left shows Google Earth's terrain and imagery (a natural color orthoimage). On the right is a Google Earth 3D tileset constructed for the same area in the Export Google Earth 3D Tileset process in TNTmips. This tileset was created using a DEM with 2-meter cell size and natural-color orthoimages with 0.3-meter cell size, with no vertical exaggeration. The Google Earth 3D tileset shows a much more detailed surface than the default surface shown for this area by Google Earth.



Google Earth views showing the same area as in the top illustrations. The view on the left shows a Google Earth raster tileset created in TNTmips (using the Export to Tilesets process) from a color-infrared orthoimage. Since this tileset only includes a custom image overlay, its custom imagery is draped on Google Earth's native, low-resolution terrain surface. On the right is a Google Earth 3D tileset constructed for the same area using the same color-infrared orthoimagery and a detailed 2-meter DEM. The Google Earth 3D tileset combines both the custom imagery and a detailed custom terrain, so more topographic detail is visible when this tileset is viewed in Google Earth. (over)



Google Earth views of an area of the Mojave Desert in southern California, USA along the linear trace of the Garlock fault (indicated by the red arrows). At top is view with Google Earth's native terrain and imagery. The other two views show Google Earth 3D tilesets constructed using a Lidar DEM with 0.5-meter cell size and with no vertical exaggeration. The tileset in the middle illustration shows a natural color orthoimage with 0.3-meter cell size, while the one below it shows relief-shading computed in TNTmips from the DEM. The custom terrain in these tilesets captures the topographic expression of this active fault trace (linear depressions and ridges) in much more detail than shown by Google Earth's terrain surface.

Google Earth views of the coastal terrace and seacliffs near Fort Ross, California. At top is view with Google Earth's native terrain and imagery. The other two views show Google Earth 3D tilesets constructed using a Lidar DEM with 0.5-meter cell size and with no vertical exaggeration. The tileset in the middle illustration shows natural color orthoimage with 0.3-meter cell size, while the one below it shows color infrared orthoimage. The detailed custom terrain in these Collada tilesets captures the form of the steep seacliffs and the canyons transecting the flat terrace surface. In contrast, the coarser terrain surface in Google Earth shows more subdued, rounded, and less steep cliff faces and canyon walls and does not preserve the sharp slope breaks at the edges of the terrace surface.