

Supplementary Geospatial Data for the March 2024 Fernandina Eruption (Galápagos)

Overview

The shapefiles contained in this folder (provided in **EPSG:4326 - WGS 84** coordinate system) correspond to the **Fernandina eruption, Galápagos (ECUA)**, which commenced on **March 3rd, 2024**. Details on the data processing, calculation methods, and retrieval techniques can be found in the publication by **Coppola et al. (2025)**, titled:

"Rapid response to effusive eruptions using satellite infrared data: The March 2024 eruption of Fernandina (Galápagos)" published in the journal *Remote Sensing*.

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Layer Contents

The folder contains the following layers:

1. **Areal_Expansion_and_Advancement_Chronology:**
 - Supervised advancement and emplacement chronology reconstructed from multiple satellite sources.
2. **Lava_Flow_Outline:**
 - Total extent of the lava field.
3. **Lava_Delta:**
 - Reconstructed lava delta extent.
4. **Fernandina_Island:**
 - Coastline of Fernandina Island at a 1:50,000 scale, accessed free of charge from the Ecuador Geoportal: [Ecuador Geoportal - Free Access Cartography](#)
5. **Caldera_Rim:**
 - Approximate shape and extent of the caldera rim.
6. **Elevation_Intervals:**
 - Benchmarks at 250 m intervals overlaid on contour lines.
7. **Contours_250m:**

- Equidistant contour lines at 250 m, based on a Digital Elevation Model (DEM) upsampled from the Shuttle Radar Topography Mission (SRTM - NASA JPL, 2013).

8. **Contours_50m:**

- Equidistant contour lines at 50 m, based on a DEM upsampled from the Shuttle Radar Topography Mission (SRTM - NASA JPL, 2013).

9. **Main_Vent:**

- Location of the main volcanic vent.

10. **Eruptive_Fissures:**

- Approximate location and shape of the eruptive fissure system, inferred from high-resolution PlanetScope imagery.

Citation

For any scientific work using this geospatial package, please **cite as follows**:

Coppola et al. (2025). Rapid response to effusive eruptions using satellite infrared data: The March 2024 eruption of Fernandina (Galápagos). *Remote Sensing*.