

Parícutin, 1943 - Many Mitigation Successes!

From Scarth (1999)

Lecture Objectives

- key precursory activity/warnings
- hazards
- mitigation efforts of the various groups (science, public, media, engineering, government)
- realistic solutions/improvements

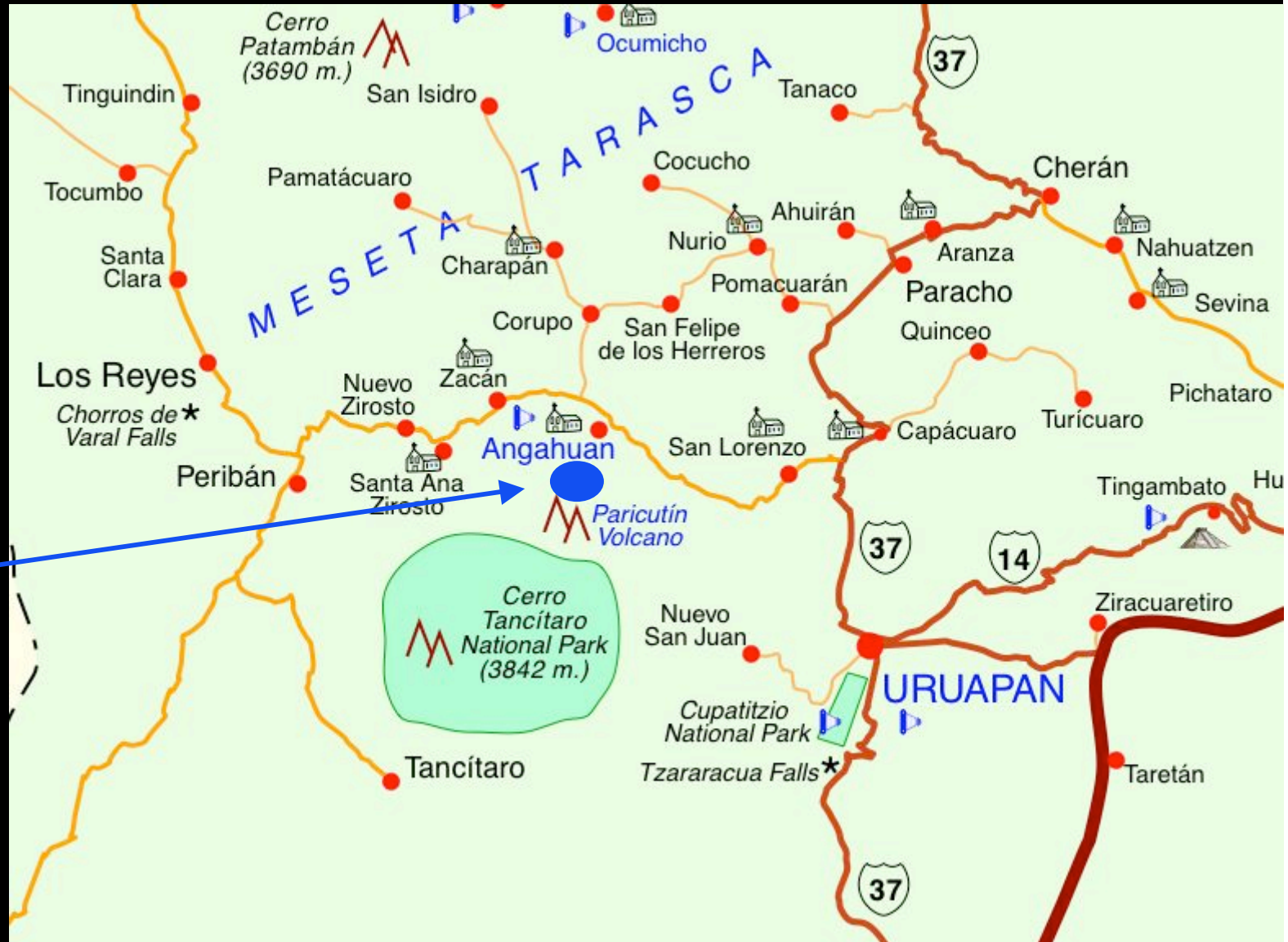
Background: Local people were the native Tarascans, settled in small villages by the Spanish monks.

-Mexico was undergoing a power struggle between the government and (Catholic) church, which was disrupting the traditional land uses, land ownership and living conditions.



San Juan Parangaricutiro: population 1,895

Parícutin: population 733



(Approximate locations)

Precursory Activity

January 7, 1943 - measured in Mexico City, not felt in Parícutin

February 5: earthquakes increase to near-constant

February 20, 4:30 pm: fissure opens in field (site of long previous rumbling, warmth)

February 21: cone about 30 m high; large Earthquake

February 22: large earthquake, lava flows



Mitigation Efforts

mid-February: head of San Juan recognizes earthquakes as result of rising magma. Message sent to next town, but no action taken before eruption.

February 20, 5:30: San Juan priest blessed and sent a group of a dozen men to observe site.

Priest exorcised the rock samples brought back and consulted a book on Vesuvius, and realized it was a volcano.



-February 21, 10am: local government met to appoint a crisis leader. Mexican president and many other officials notified. Volcano named: “Volcan de Parícutin”.

At about the same time, the earthquake caused many people to evacuate on their own, typically to the next town.

February 22: arrival of well-known Mexican geologist. He taught them a little volcanology and calmed fears about the activity.



Evacuation of Parícutin, June 1943

The government acted in advance of the advancing lava flows and evacuated Parícutin. Within one week of eruption start, land was scouted out for possible evacuation.

-early May: land purchased near Uruapan (30 km SE)

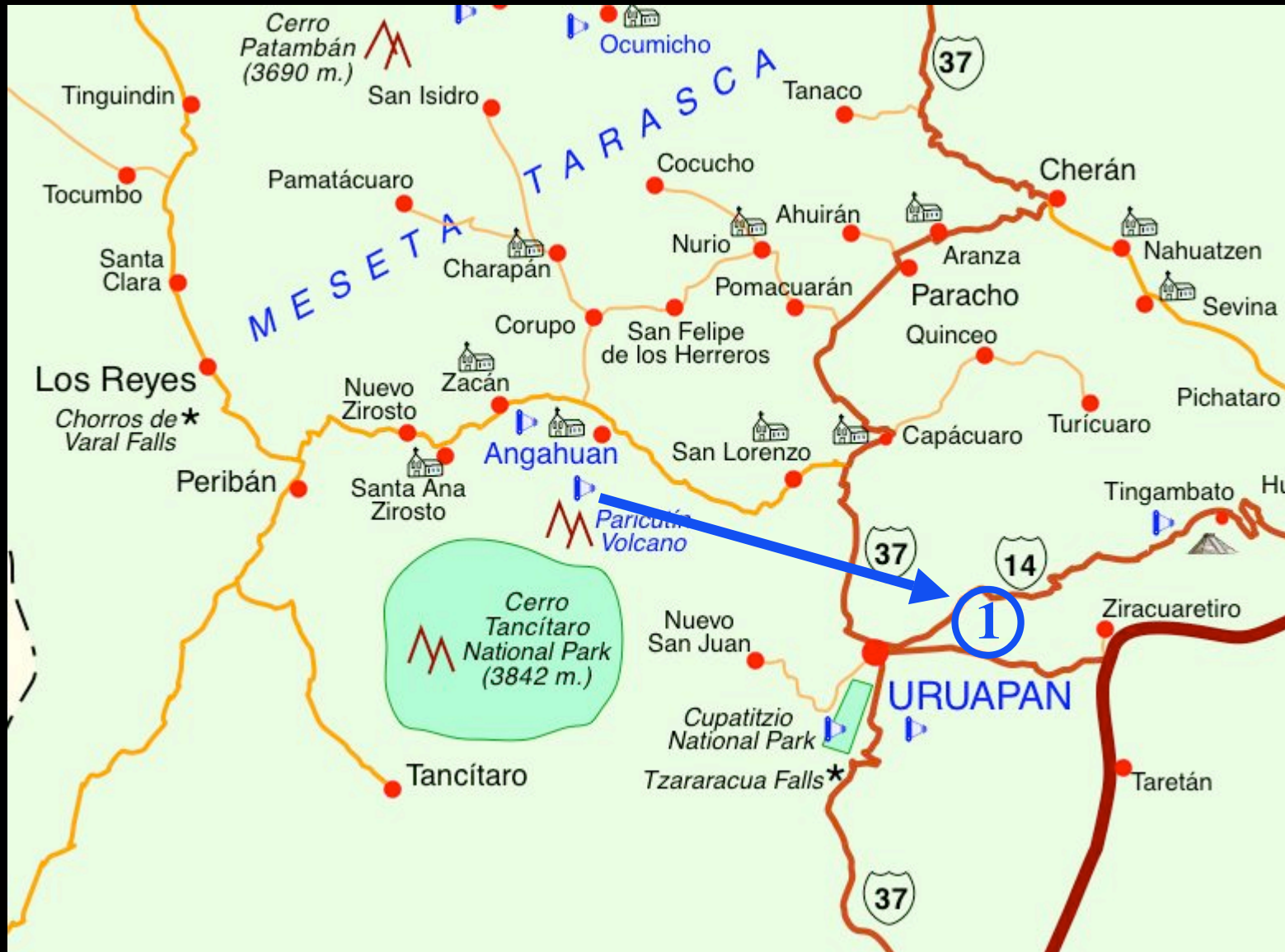
-Relief agencies contributed \$165,000 worth of food

-Red Cross set up station in San Juan

-June 13: Government + geologists agreed to evacuate.



Evacuation of Parícutin, June 1943



The main livelihood (agriculture) was ruined. Evacuation plans were splitting the community:

-Younger people tended to evacuate early using the government's help.

-Older ones tended to remain as long as possible, despite hardships.



Evacuation transportation supplied by government.

Evacuees were supplied with new (traditional-style) houses, land, and supplies, but relocation was unexpectedly difficult. **Why?**

- Culture shock
- climate and agricultural style
- shoes
- village name



Evacuation of San Juan

Occurred later, September 1943.

October 6, San Juan community leaders chose new location, 65 km SE: “Miguel Silva”. Government provided transportation.

Problems?

- Agricultural differences
- Lack of farmable land
- Water quality
- violent local opposition



Evacuation of San Juan, Part II

A new site was selected by the community men: “Rancho de los Conejos”.

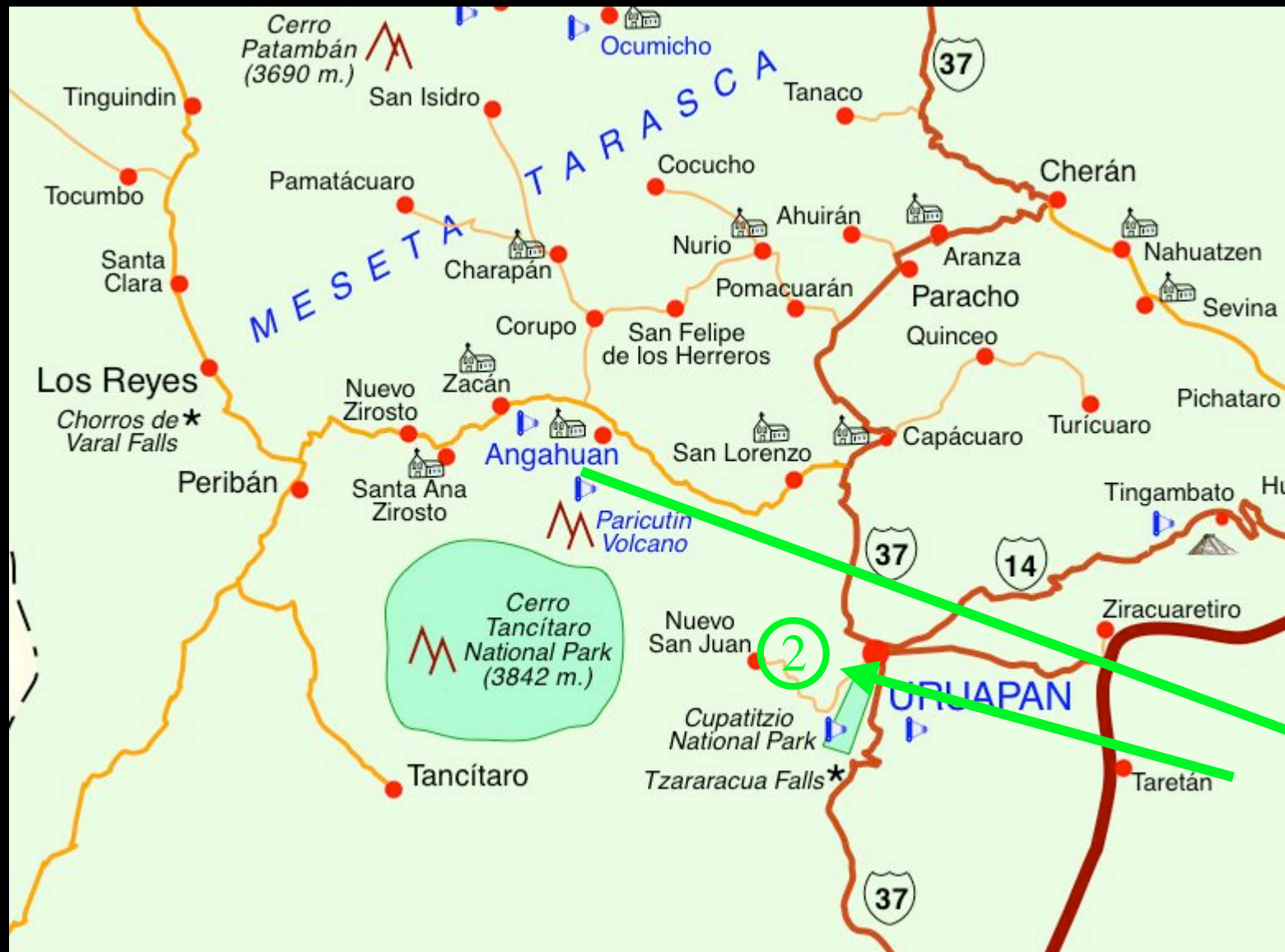
May 9, 1944: Bishop removed Lord of the Miracles, and progression began to new town. Government purchased land for the community, to closely match previous town.

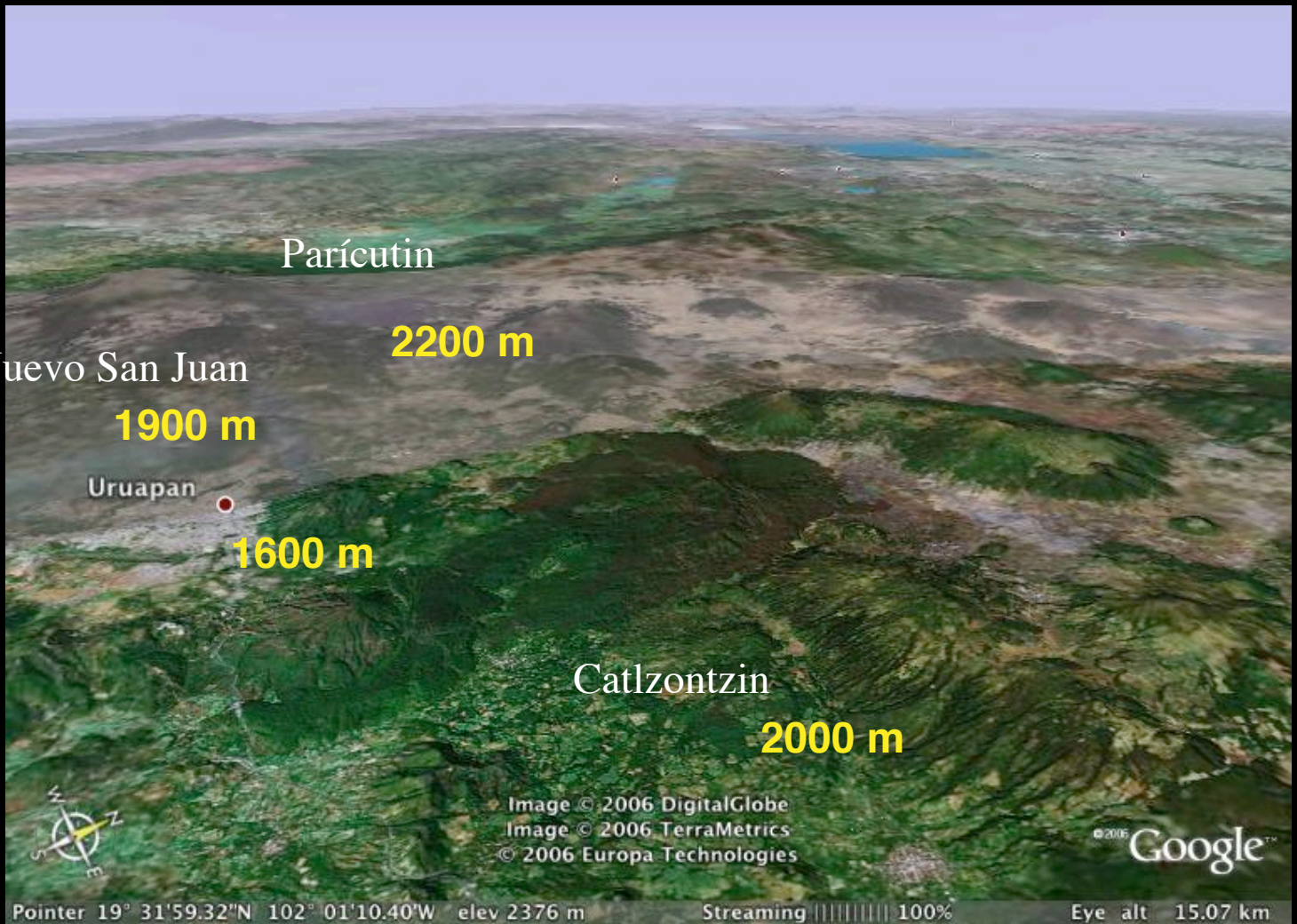
Problems?

- No houses, water, power supplied at this site.
- Not everyone evacuated at once; some waited until their homes and land were covered by lava.
- Local priest denounced removal of statue.



Evacuation of San Juan





Key Hazards - Primary

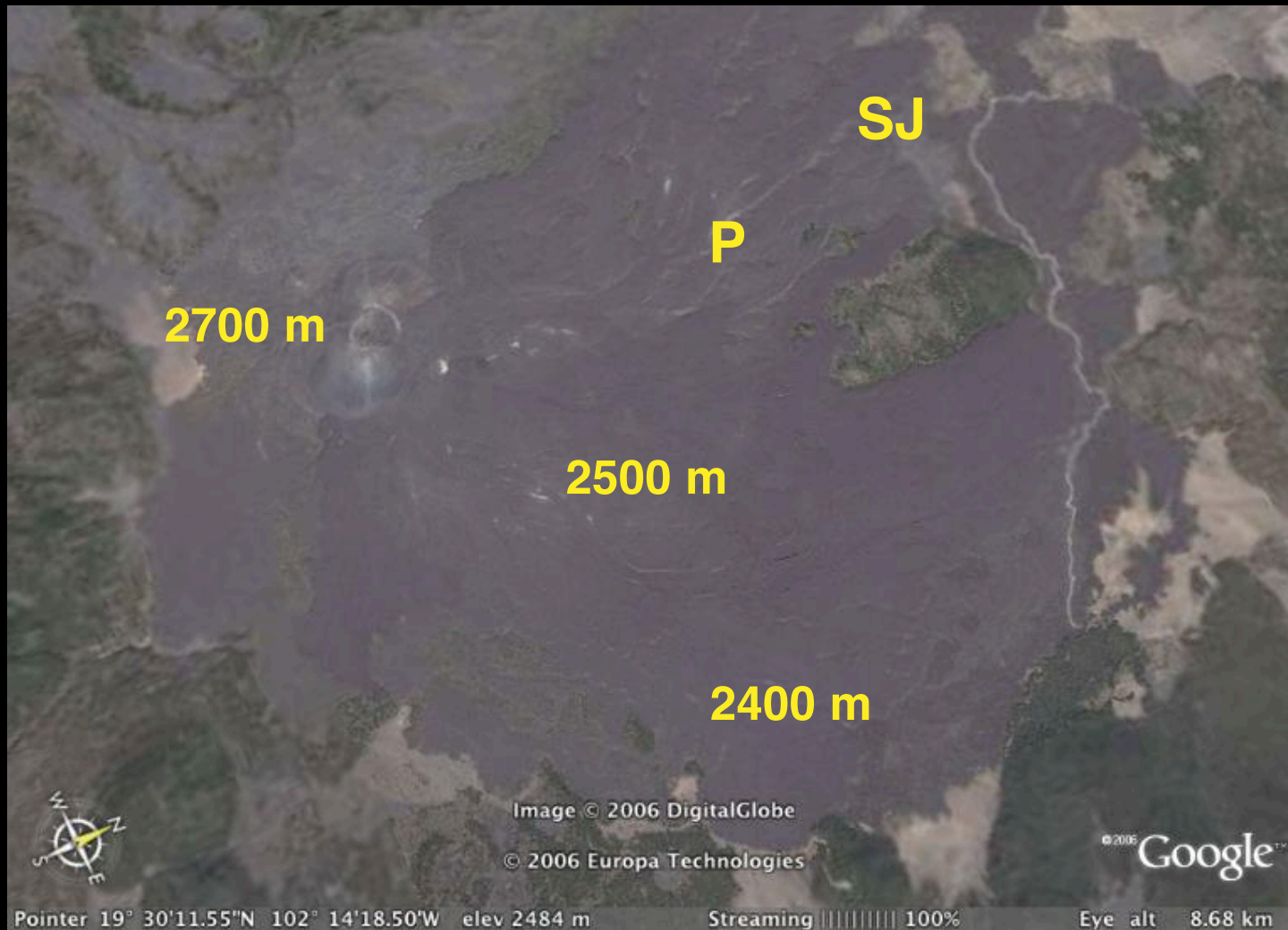
- earthquakes (February, 1943 - 1944)
- cinder cone growth
- ash falls (mainly March - June, 1943)
- lava flows (1944-1947)
- lightning (only 3 deaths from eruption)

Secondary

- loss of agriculture
(with some benefits)
- loss of animals
(also lost some pests)
- relocation
(>100 deaths)



Parícutin Lava Flows



Improvements?

-science: recognition of hazards, events, education

-government: evacuation, relief, planning

-media: communication

-engineering: housing,
water, agriculture

-public: cooperation,
support of laws

