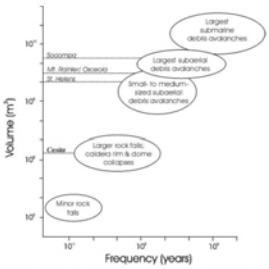
CASITA LAHAR, 30 OCT 1998

REBECCA WILLIAMS

THE DISASTER

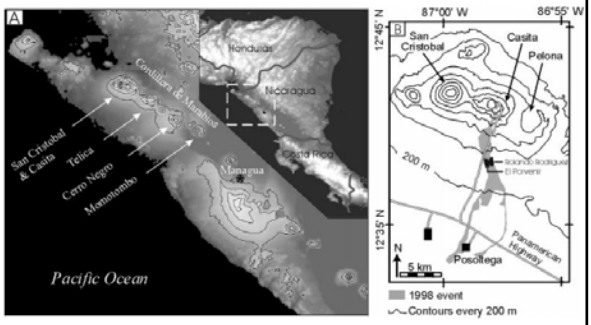
- Avalanche on flanks of Casita Volcano, caused lahar.
- Devastated 12km^2 including two towns, killing 2500 people and damaging the Pan American Highway.
- What Happened?



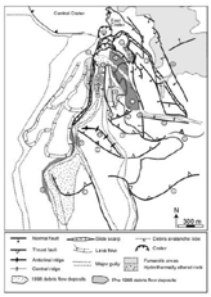
OUTLINE

- GEOGRAPHY
- GEOLOGY-THE HAZARD
- HURRICANE MITCH-THE TRIGGER
- THE EVENT AND HUMAN IMPACT
- THE RESPONSE
- FUTURE MITIGATION

GEOGRAPHY



GEOLOGY



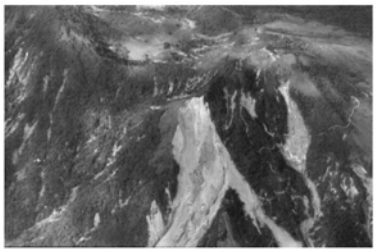
- Composite strato-volcano
- Deeply dissected
- No historic activity
- Strong hydrothermal alteration
- Heavily faulted

HURRICANE MITCH

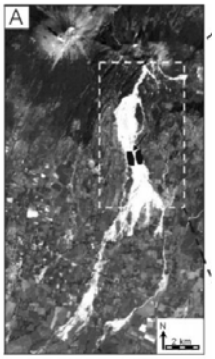
- **21 Oct: Tropical depression formed south of Jamaica**
- **25th Oct: Evolved into Category 4.**
- **Crossed Central America.**
- **26th-29th Oct: 1217mm of precipitation.**
- **Oct 30th: 485mm of precipitation.**

THE EVENT

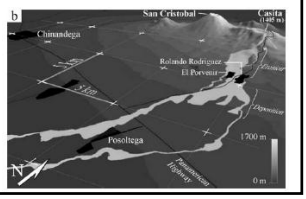
- 10.30-11AM: Primary failure, avalanche ~200,000m^3.



THE EVENT



- Transformed into lahar with extreme baulking.
- Speeds of >40ms^{-1}



THE EVENT

- 2.5-3 mins to reach towns of El Porvenir and Rolando Rodriguez.
- 1km wide, 4.5m deep flow.
- Stripped dense forest
- Only 1 surviving house.
- Subsequent HCF affected Pan Am Highway

THE RESPONSE

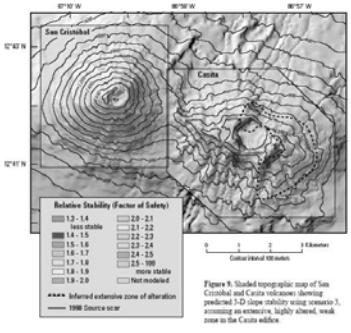
- **Slow official response: Disbelief, political unrest.**
- **Soldiers arrived 2 days after event.**
- **Make-shift camps.**
- **Unavoidable?**
- **Hazard not known.**
- **Timing of Mitch**

FUTURE MITIGATION?

- INETER:
  - Seismic monitoring
  - Alert Messages
  - Monitoring unstable slopes
  - Use of meteorological stations
  - Working with local Civil Defense
  - Working with research groups: USGS and Universidad de Oviedo

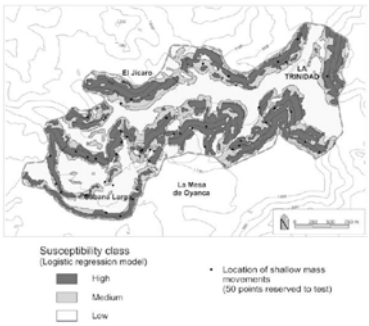
FUTURE MITIGATION?

- USGS:
  - Identifying lahar pathways and frequency of historic events
  - Producing instability maps



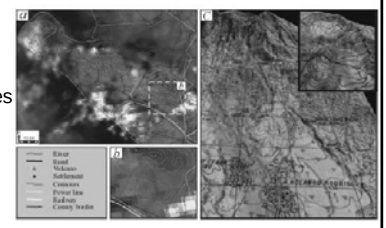
FUTURE MITIGATION?

- Universidad de Oviedo:
  - Shallow mass movement susceptibility models for Nicaragua's mountainous area.



FUTURE MITIGATION?

- UK AND FRANCE:
  - Using Remote Sensing to identify unstable slopes and areas of possible collapse.
  - Using Remote Sensing as a Disaster Management Tool.



QUESTIONS?

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