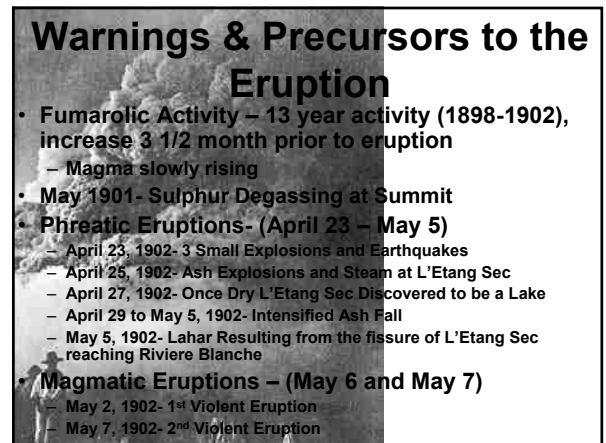
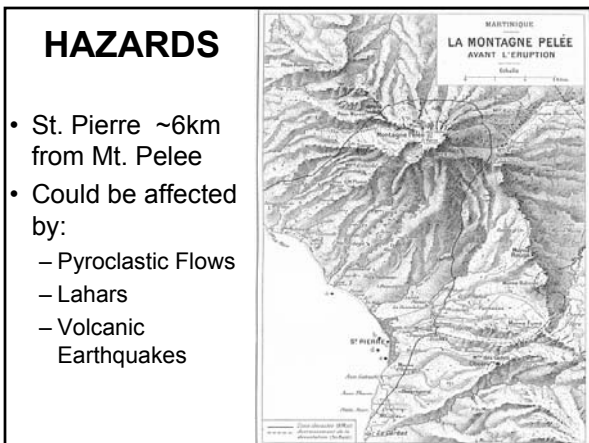
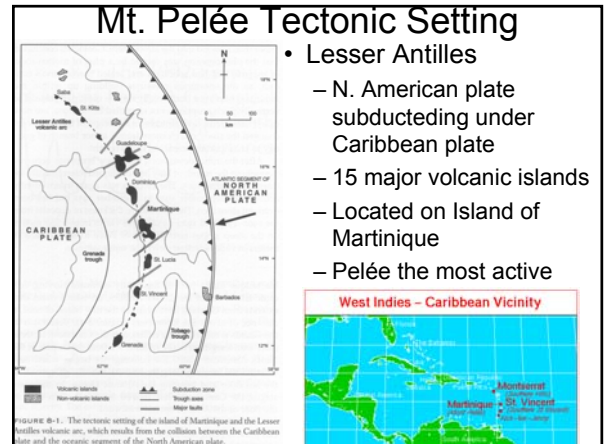
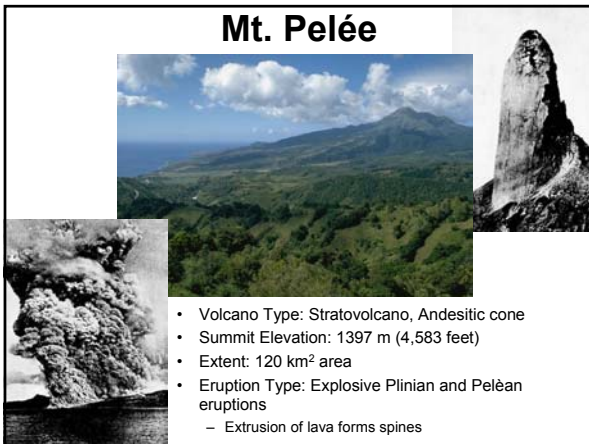


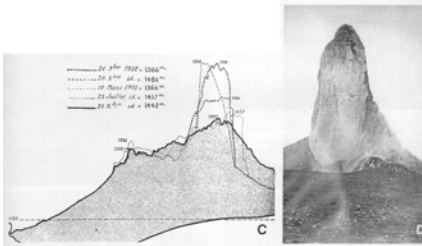
OUTLINE

- **Geological Setting**
- **Hazards**
- **Eruption of May 8, 1902**
 - **Eruptive History:** Warnings and Precursors to the big event.
 - **Preparedness:** What did the authorities and residents around Mt. Pelée do to prepare for disaster
 - **Summary of the Eruption and its consequences**
 - **Reaction and Recovery to the Disaster**
- **What went wrong?**
- **What could've been done better?**



Volcanic plug Spine of Pelée

- Volcanic plug was being pushed up in the crater called L'Etang Sec
- Cylindrical, 200 m in diameter
- Rising at a rate of 3-6 m per day
- Reached 115 m above the crater floor by time of eruption



• Earthquakes, ashfalls, and explosions continued...

St. Pierre Before the Eruption

- **Pre-Eruption Preparedness and Reaction**
 - Government & media issued reports downplaying the hazards
 - Populace thought there was little risk
 - Eruption were similar to those in 1851 which had not affected St. Pierre
 - Most people are reassured and do not evacuate despite fear
 - Poorer residents do not have the money to get a boat away from St. Pierre
 - The city's population swelled by refugees from surrounding areas prior to May 8.

ERUPTION! May 8, 1902



City Devastated

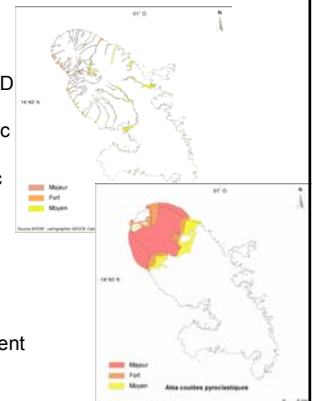
- St. Pierre, St. Philomène destroyed
- 1 meter thick masonry walls blown down
- 3 ton statue moved 16 meters
- 20+ ships off shore caught fire, crews killed
- ~29,000 killed
- 2 survivors
- Smaller pyroclastic flows produced until July 1905
- **Why Pelée Killed**
 - Highly Directional Flow
 - Ground Hugging Flow
 - City Not Evacuated

RESPONSE & RECOVERY: What Went Wrong?

- **May 11 Election**
 - Martinique's governor discouraged evacuations; he might lose election
 - May 4, sent telegram to Paris, "the eruption appears to be on the wane"
 - Published reassuring notices that indicated no risk
 - Election
 - Election to be held May 11 to elect a deputy
 - Towns people were strongly discouraged against evacuation
- **Media**
 - *Les Colonies* published a series of articles declaring no danger: "Mount Pelée presents no more danger to the inhabitants of Saint-Pierre than does Vesuvius to those of Naples."
- **Lack of knowledge about hazards**
 - No hazard maps
 - First recognized example of Pyroclastic flows/surges at Pelée

What can be done to prevent future disasters?

- Pelée is still active
 - "highly likely that before AD 2080, Mt. Pelée might experience volcanoseismic crises or phreatomagmatic/phreatic activity...." (Smith and Roobol, 1990)
- **Mitigation:**
 - Hazard Maps
 - Study the Volcano
 - Create disaster plan in event of another catastrophic eruption occurring



What has been learned as a result of the 1902 disaster?

- **Pyroclastic Flow Discovery**
 - 1904 La Croix coined term “nuée ardente” for pyroclastic flows after studying eruption of Mt. Pelée
 - La Croix pointed out the co-existence of a high density basal “glowing avalanche” and a low density upper glowing cloud
- T. Jaggar, sent to investigate disaster at Mount Pelée.
 - His experiences there led him to devote his career to active volcanoes and related geophysics.
 - Founded HVO to study active volcanism

Catastrophic Eruptions of the last century

- May 8, 1902, Mt. Pelee, ~29,000 dead, Intensity: Large
- 79 AD, Vesuvius, ~3,360 dead, Intensity: Huge
- 1815 AD, Tambora, ~92,000 dead, Intensity: Colossal

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