

The Soufriere Hills Volcano, Montserrat

Answer

Ejected Materials

1. Lava
Viscous lava which is a mixture of molten rock explodes violently into the air and flow very slowly.
2. Pyroclastic Flow
This is a mixture of hot volcanic ash, boulders and gas with temperatures around 100 to 800 °C. The flow may move at speeds of 70 mph or faster down the volcano killing everything in its path.
3. Ash fall
In violent eruptions the lava is hurled into the atmosphere, cools and solidifies. It falls back to earth as fine grey particles or boulders.
4. Mudflow (lahars)
Loose ash deposited on the volcano may mix with rain water and form mud flow and flow rapidly down the slope of the volcano.

Effect on people and their property

- 19 people died killed by pyroclastic flows in June 1997.
- The entire island was covered by a thick layer of ash which resulted in respiratory problems because of inhalation of ash.
- The city of Plymouth was destroyed. The city was covered in boulders and ash.
- Many homes were buried by debris from the pyroclastic flow, burned by the hot pyroclastic surges, or set alight by the intense heat in the atmosphere.
- The Bramble airport was destroyed by a pyroclastic flow in 1997.
- The southern half of the island was made an exclusion zone and all residents were relocated to the north of the island. The towns of Salem and St. John were unable to support the large influx of people.
- More than half of the 12,500 population migrated to England or neighbouring Caribbean territories, for example, Antigua.
- The tourism industry was greatly affected as people were afraid to visit the island.
- There was a disruption of services such as banking, schools and health care.
- Agricultural fields were destroyed and many businesses closed down.
- Almost half the population was unemployed.

The Physical Environment

- The vegetation and wildlife in the many areas were either incinerated by pyroclastic flow or covered in ash
- The island was covered by a thick layer of ash.
- Rainfall is slightly acidic (pH 5-6) however around the volcano the pH levels were between 2 and 3.