

## Burning of upper vegetated areas to the east and morphological changes to the southwest: Arenal Volcano.

During the third week of September 2008 a series of changes were documented at Arenal volcano, Costa Rica. Towards the east and northeast flanks burning on vegetation was verified along the upper, intermediate and lower areas. Meanwhile, along the SW flank a rapid infilling process was confirmed as a product of 3 sustained months of material deposition. It is in that sector were June PF's took place.

Report of severe burns was voiced by La Fortuna neighbors around middle august. Such effect correlated with deposition of a fine layer of dust produced by minor PF's still moving on the opposite side of the volcano (Fig.1).

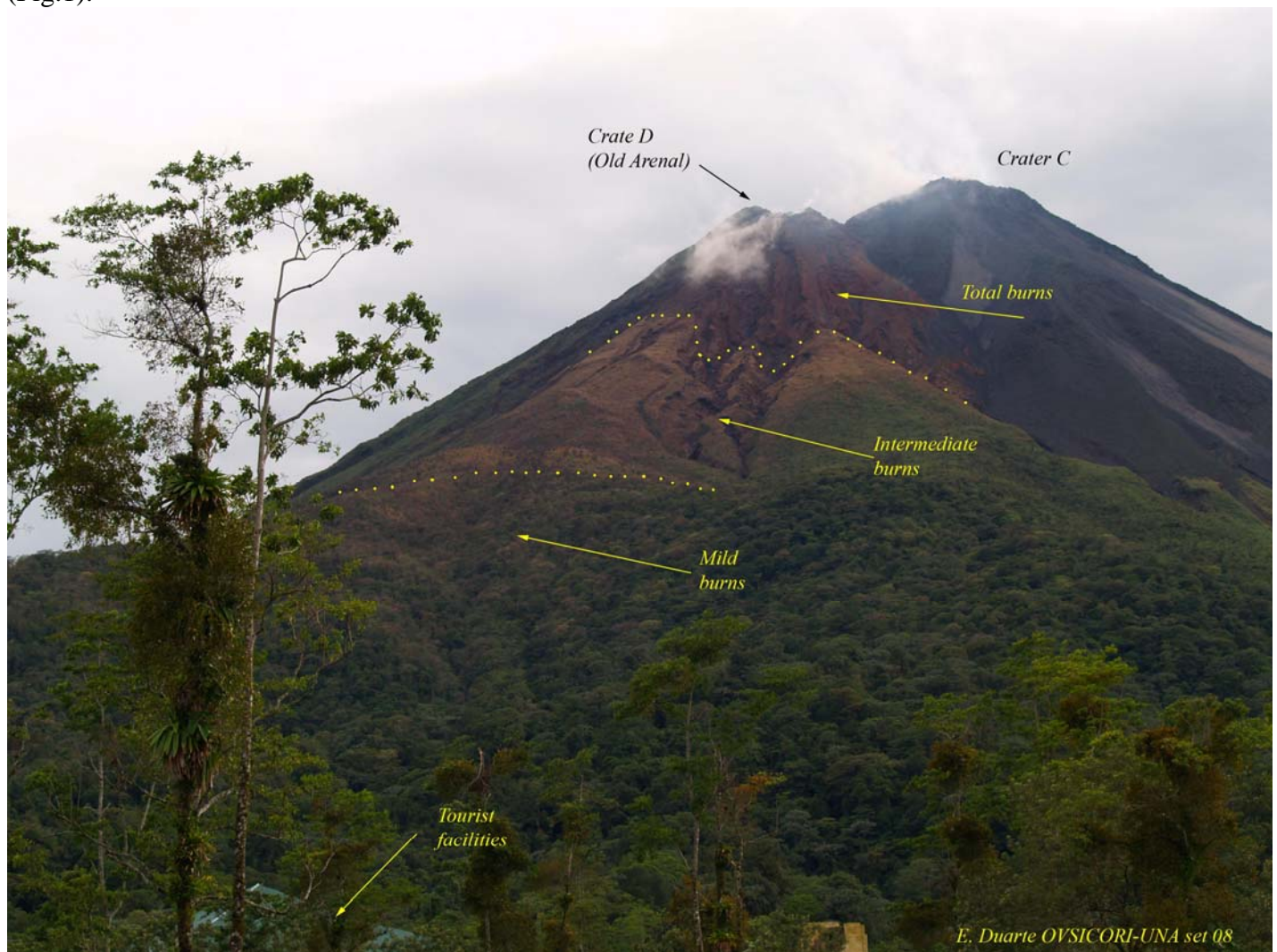


Fig. 1. General view of three sections affected by recent burning of vegetation.

That fine ash was carried along the E and NE flanks, impacting more severely the yellowish area depicted in fig 1. Minimum quantities reached Fortuna City (some 3km eastward) provoking concern. If such wind inversion is not common, it has been documented similar situations in recent decades. Strong winds from the Pacific produce such wind change. Fresh fine dust, produced on the summit, by the output of an active lava flow, moves along vegetated areas on the less affected flanks. That whitish dust disappeared rapidly before the presence of heavy rains.

Similar in importance are topographical changes along the SW outer walls, where hot avalanches took place last June. Infilling of material along the canyon produced positive topography where a tall levee is now

observed. Such levee extends down the flank some 800m departing from the summit up to some 1200m.a.s.l (Fig.2).



Fig. 2. Infilling of gully formed during PF's in June 2008.

At that point a significant wall of material impedes the further course of new blocks rolling down to the piedmont. Hence this barriers diverts blocky stuff in at least two opposite directions. The distal area heavily affected by large deposits in June and July, remain untouched except for occasional blocks that are able to overcome the mentioned barrier. Some blocks are seen rolling along the top of the levee creating glowing after the late hours in the afternoon. Pulverized, incandescent material accumulates on both sides of the distal barrier forming a wide fan of some 200m wide (Fig.3).



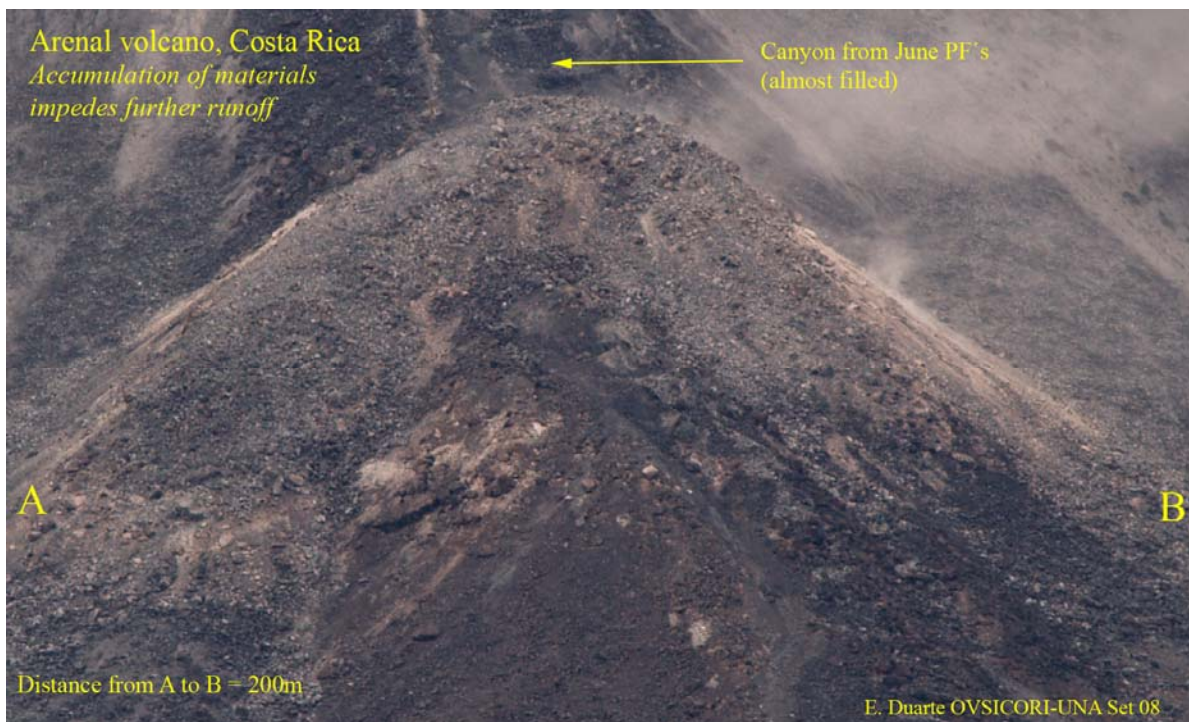


Fig. 3. Distal barrier of material accumulated there in a 3 month period.

Changes also include the infilling of the SW edge of the crater, collapsed since the first PF's. A significant mass of freshly squeezed material to the top is provoking, slowly, the blockage of that exit. For this reason some isolated blocks are now rolling down along the opposite north face of the volcano. This scattered material, is easily spotted during the after dark hours, reaching as far as the lower vegetated kipukas on that side. The number of blocks increase when explosive eruptions irradiate material in a circular fashion impacting the entire summit (Fig. 4).



Fig. 4. General view of the upper gully partially filled by recent blocky material.



Finally and as a general summary some of the mentioned elements are compiled in a final photo. Although the avalanches that run along the levee are not as voluminous as those initial ones, they are able to capture attention to visitors, parkrangers and residents (Fig. 5). Also, due to these and other related hazards is important to restart all risk issues around the entire volcano. Since the last, and single, decree in January 2001 such interinstitutional topic has not been part of an integrated plan to complete a needed volcano hazards map. With common interest of many audiences risk can be reduced for great and minor investments threatening to dangerously approach hazardous areas.

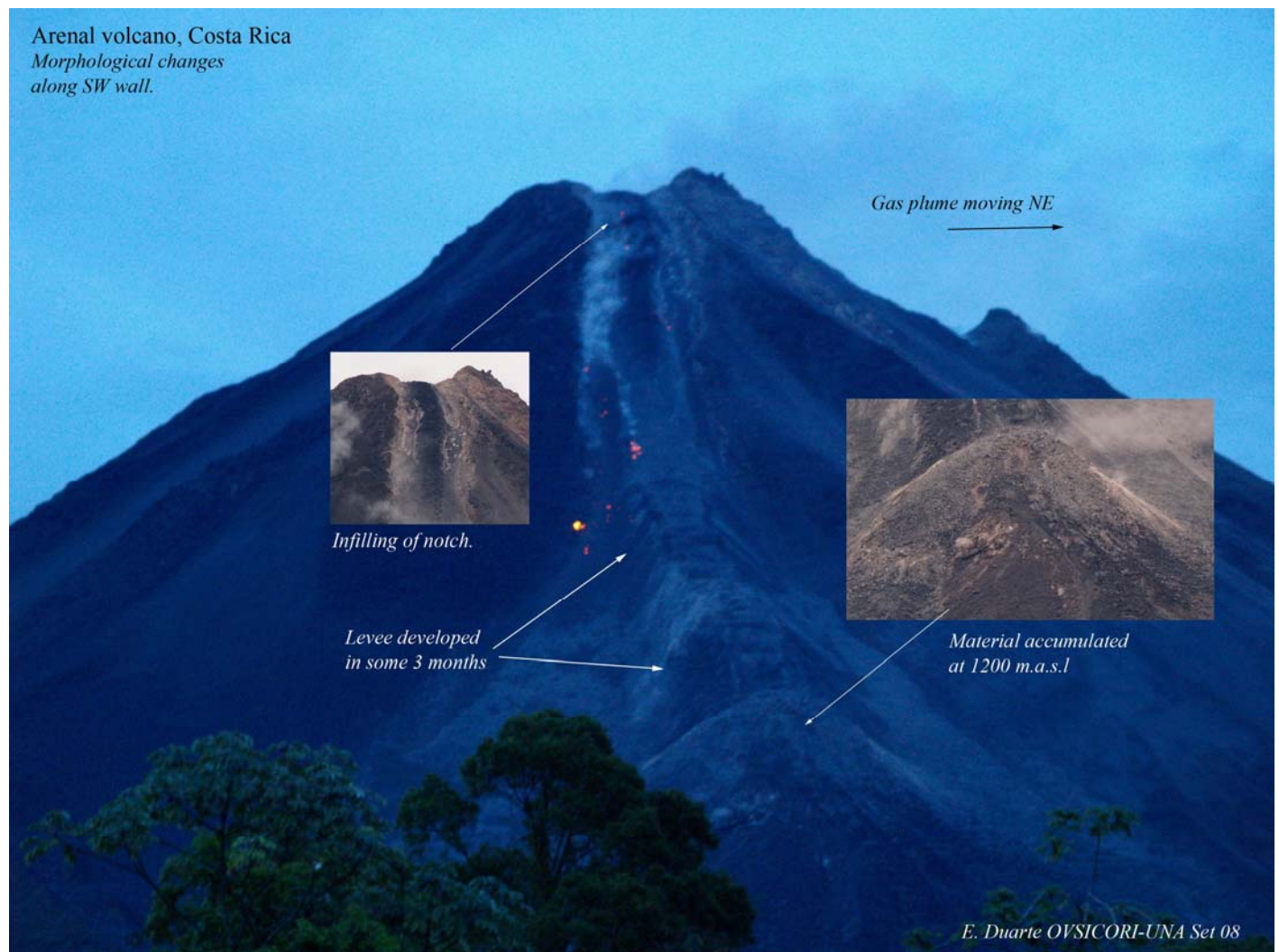


Fig. 5. Summary view of changes along the SW flank.

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