

## **Outcrops in Mochima National Park - Analogues to Thrust Belt Giant Oil Fields**

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### **Summary**

Our understanding of structural style in the subsurface of a particular area relies on seismic imaging and interpretation. In contrast, our understanding of general structural style has been highly dependent of 2-D and 3-D views of outcrops from around the world. Thus, outcrops from the same geographic area as the subsurface are ideally suited to be used as analogues. Moreover some of them can be used universally as in the case of the outcrops from Mochima National Park in Venezuela.

The numerous islands located north of Puerto La Cruz in Eastern Venezuela make up the Mochima National Park. The accessibility of these islands combined with the variety of structural styles have created a perfect structural analogue for the giant oil fields of Norte Monagas (El Furrial, El Carito, Santa Barbara and Tacata). These can be used to better understand many other thrust belt structures from around the world.

We will review some of these outstanding outcrops. These include (Figure 1) the fault bend fold on the Chimana del Oeste island that we compare to the seismic resolution in the El Furrial trend, the use of analogues when dealing with RFT data (pressure from repeat Formation Tests) and the remarkable series of fractures associated with a major East-West fault on Chimana Grande. Figure 2 depicts one of many interesting features of the island of La Borracha: a well developed small scale triangle zone. Other deformations will be described and tentatively explained, one being shown on figure 3.

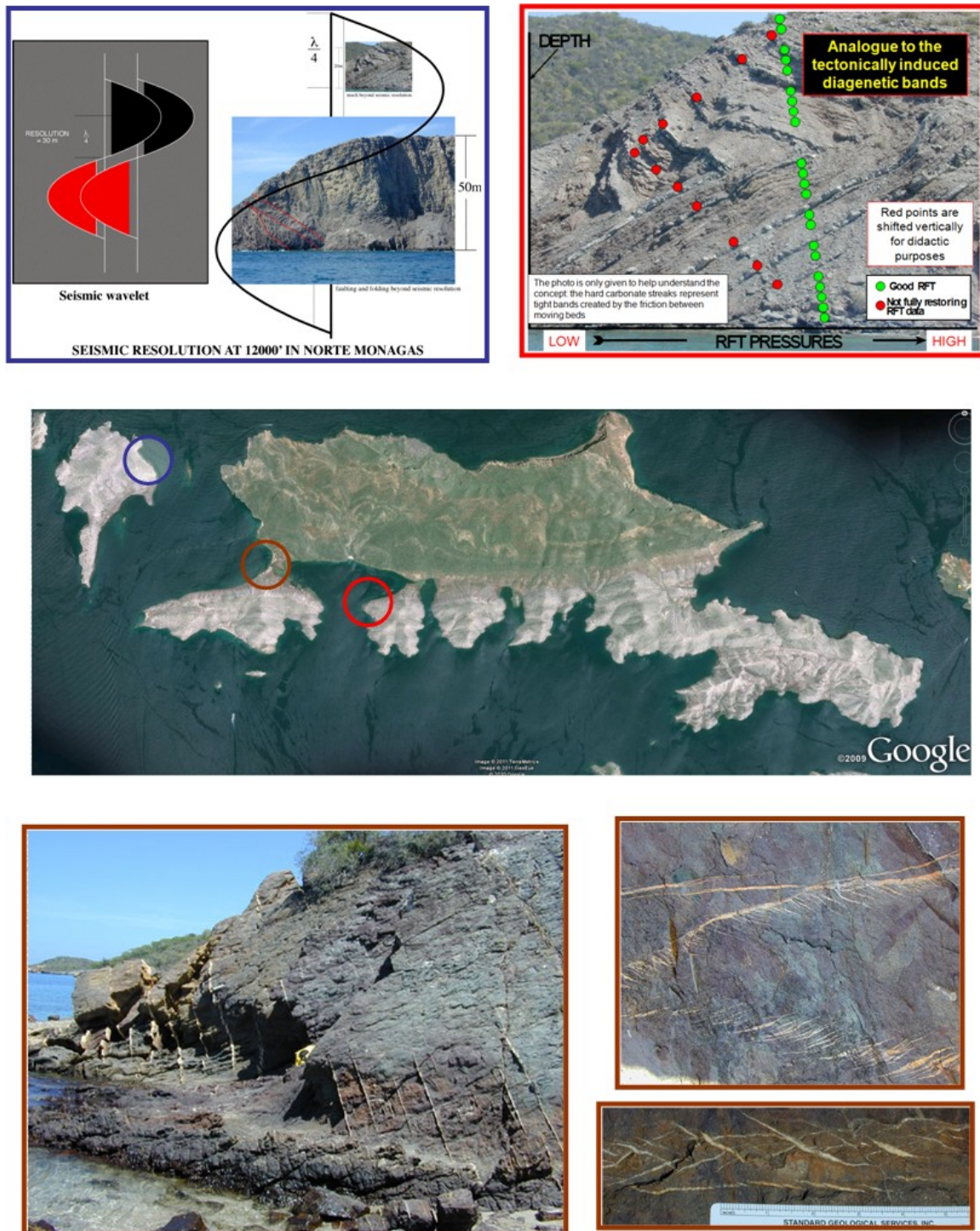


Fig 1 Some useful analogues on Chimana Grande Island (Western part)



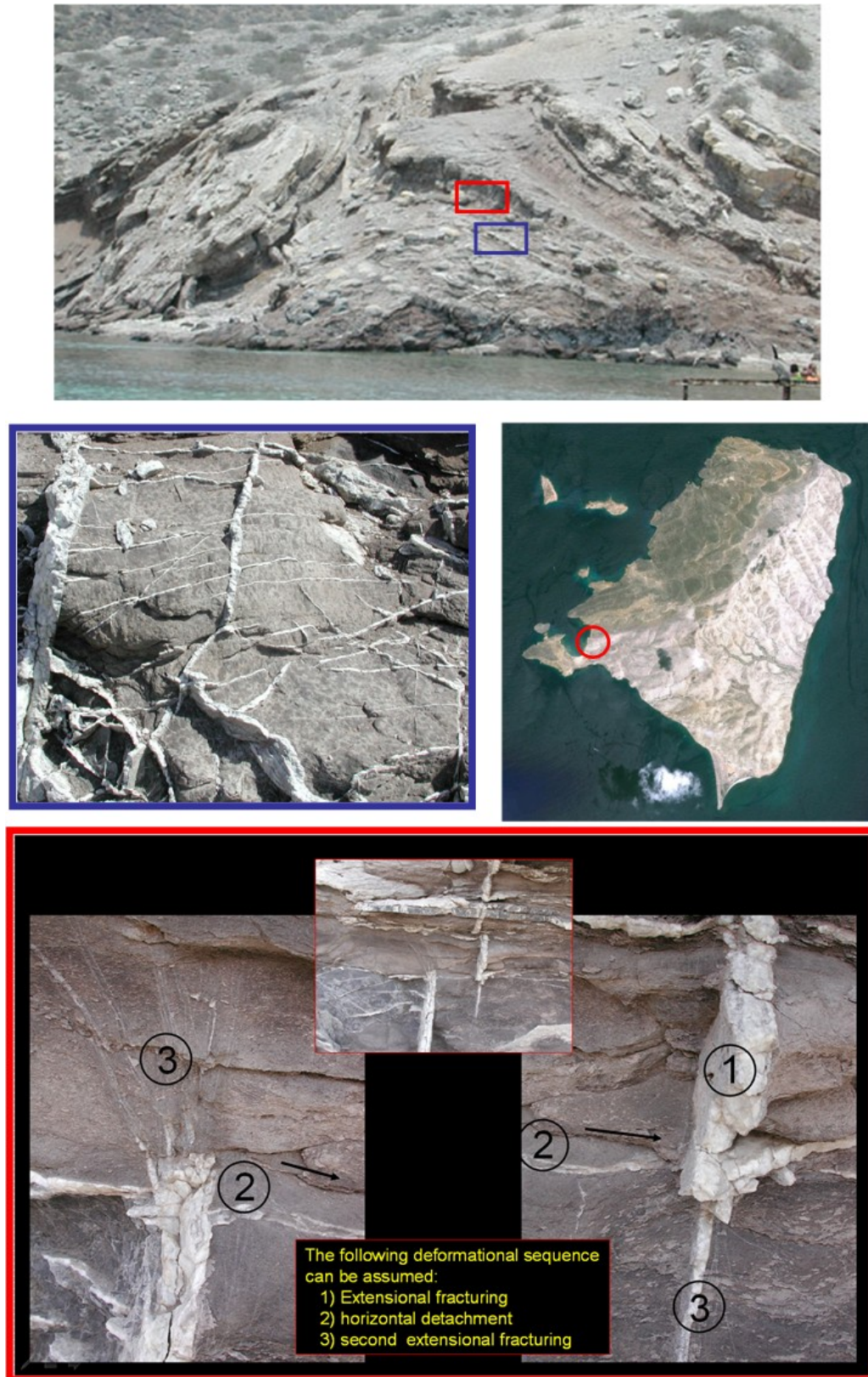


Fig. 2 Small scale triangle zone in the island of La Borracha



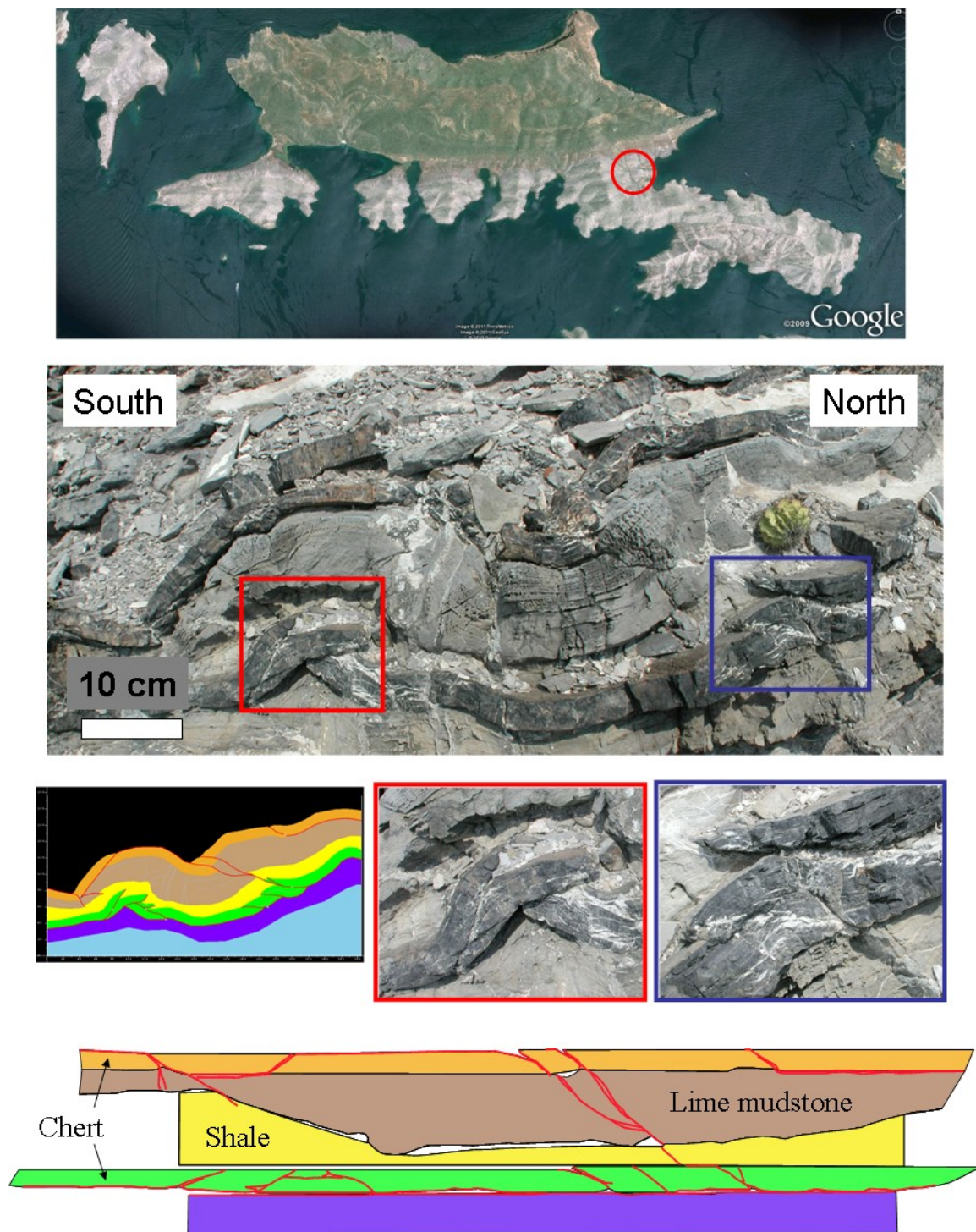


Fig.3 Small scale complex deformation and a proposed reconstruction