

Project Update: August 2014

Biosphere Reserve Sierra del Rosario was visited in March 2014. During this visit an experiment for *Inga punctata* mechanical control was started. For the experiment were used 24 individuals of the species, all they located in riparian forest close to Bayate River, the most important on the reserve. 12 of them were treated by tree cutting and the other 12 by tree double girdling. All these 24 individual will be monitoring in next visits for re-sprouts removing and fate record. Also main rivers, slopes, conservation areas, and main and secondary roads were prospected in order to document *I. punctata* presence. Presence data as well as location of non-invaded riparian forest remnants have been geo-referenced in order to elaborate maps using GIS. Most of the presence data are new distributional records for the species, including all records from Santiago riparian forest, as well as most from Bayate's.



Photo 1. *Inga punctata* tree treated by double girdling in the control experiment.

After three field trips prospection of Biosphere Reserve Sierra del Rosario (BRSR) is almost done. Riparian forest has been corroborated as the most affected by *Inga punctata*, although this alien tree has been located also at the roadsides, in no few occasions close to some invaded riparian forest. This alien plant has been recorded in riparian forest of three of five major rivers of BRSR: Bayate, Manantiales and Santiago. All of them located at western half of the reserve, the last two limiting the reserve from the west. The other two rivers at eastern sector show different situation. Only a few points with presence of *I. punctata* were found at San Juan River and no one at San Francisco River. Based in the results the majority of non-invaded riparian forest remnants occur in that eastern sector and in upper streams of Bayate River and western sector of the BRSR has been more affected by *I. punctata* than the eastern one. Thus *I. punctata* has a more extensive distributional range than initially suspected and going beyond BRSR. Due to this, also western part of the Sierra del Rosario mountain range further than BRSR boundaries were prospected, geo-referencing presence data.

In almost all assessed sites of riparian forests with presence of *Inga punctata*, it appears as dominant species. Its relative abundance on invaded riparian forest sites is high, exceeding frequently the 35% of overall plants, and reaching even the 60% of the overall regeneration under canopy forest invaded. Therefore this alien plant act as invasive transformer of the riparian plant community. We have also identified and recorded the composition and abundance of other plant species on these invaded sites, as well as regeneration. Control experiment was monitoring in the two last visits, removing re-sprouts from individuals in both treatments. Also were removed once a new tissue produced by plants in the girdles area.

Pictures of its different life stages have been taken for the identification guide.



Photo 2 and 3. During prospection of Sierra del Rosario.



Photo 4. Bayate's stream invaded by first trees of *Inga punctata*. Photo 5. High regeneration of *Inga punctata* close to one stream.



Photo 6. New tissue produced by plants treated by double girdling after one month from started the experiment.