

## **Supplementary material 2.** Plot type definition, and illustration of the different types.

Five types of plots were defined, as geomorphological factors. The definition is based on field observations, and on images of each plot and their projection on GoogleEarth Pro v.7.3.4.8248 using the “Elevation Profile tool” (Fig. 3). For each plot type, we evaluated the canyon shape, the mean slope percentage, and the height of the surrounding cliffs (distance from the base of the riverbed to the canyon opening). For very narrow canyons, such as the Maki Canyon and the Rats Canyon, the canyon height could not be evaluated with precision, due to the lack of GPS signal in the field.

The 5 types defined are: (1) open plot, the riverbed is outside of the canyon area, the banks are very low with no shading effect; (2) less open plot, with banks from 3 to 15 m high, and a low slope of 15%; no cliffs can shade the riverbed; (3) banks are from 15 to 50 m high, with a round section and a slope always less than 45%; (4) cliffs are not fully vertical and rise from short inclined banks; (5) plots in closed canyons surrounded by high cliffs which are vertical and directly rise from the riverbed itself.

