Coffee (Coffee arabica L.) is an economically and socially important crop in Puerto Rico, that generated revenues of $38 million in 2011. Main production problems are of biotic origin. Coffee leaf scorch (CLS), caused by the bacterium Xylella fastidiosa (Xf) Wells et al., results in significant economic losses in many countries. In the Caribbean Basin, Xylella fastidiosa was reported causing disease in coffee trees in Costa Rica (Rodríguez et al., 2001) while in South America the bacterium was reported causing epidemics in Brazil (Beretta et al., 1996). This pathogen is transmitted by xylophagous leafhoppers which are common and abundant insects of tropical and subtropical environments and play important ecological roles in these ecosystems (Redack et al., 2004). In Puerto Rico, Marino-Cardenas and Zapata (2009) studied bacteria found in potential vectors such as Agallia pulchra, Apogonalia spp., Caribovia coffeacola and Hortensia similis. At present, coffee trees showing marginal and apical leaf scorch, yellowing of new leaves, reduction of internode length, and abnormal production of new flushes (witches broom) resembling CLS disease have been observed. A serological test DAS-ELISA (AGDIA, Elkhart, IN) at 650 nanometers was performed to diagnose Xylella fastidiosa. Samples were taken from leaf veins and branches of: Coffee (Coffee arabica L.), Citrus spp. and Inga spp. Absorbance readings were separated in four groups from lowest to highest values. A total of 340 trees were located using GIS technology and, thirty one of them presented values three times higher compared to the average absorbance readings, values typically indicating the presence of Xylella fastidiosa. These values were mapped using Explorer ArcGIS online software (Environmental Systems Research Institute, Inc. Redlands, Cal. 92373), to visually assess trees associated with bacteria in four localities of Puerto Rico: Las Mariñas (N18°13′14″; W66°01′38″), Adjuntas (18°09′30″, W66°45′27″), Yauco (N18°09′57″; W66°49′36″) and Jayuya (N18°09′35″; W66°38′45″). Adjuntas and Jayuya showed the highest levels of absorbance. Absorbance was related with higher numbers of potential vectors at these localities (Brodbeck et al., 2011). In contrast, Yauco showed the lowest absorbance in all the tree species sampled. This research is part of the project “Potential effects of Xylella fastidiosa on shade coffee establishment in Puerto Rico” (AES-ZTS-51). This is the first report using GIS technology for mapping coffee and shade trees associated with different bacterial populations in four localities of Puerto Rico.