

Lemon trees, shading experiment, and maps

Coralita project on Saba, June 2018 update

Judit measured shade, a lemon tree was half eaten and Elizabeth bought a satellite image of Saba. What have we been up to these past few months? Read it here!

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Lemon trees in St. John's

What could we do with unused land that is nicer than leaving it covered in Coralita? That is the question we discussed during a brainstorm night in February, where very creative ideas came up like a mountainbike trail, an outdoor theater, a petting zoo, fruit orchard and a flower garden. In view of time and resource constraints, planting fruit trees was most feasible, which was done with help of the Agriculture station. Since then, Mr. Raymond Gomez has been watering them every day, and they are growing well!



The trees are growing! On the left when we had just planted them in March 2018, on the right May 2018

Yet, so is Coralita, as you can see in the picture below.



Coralita when we had just removed the bush in March (left), and it's all back in May 2018 (right)



The topped over fence.
Picture credit: Judit Planas i Puig

Mid-April, goats broke through one of the fences and ate half the tree. Raymond recovered it, replanted it and reinforced the fence.

The purpose of this experiment was to see if planting fruit trees is a good alternative use of your land instead of Coralita. Several findings are important for that:

Water and fencing are the main expenses. Government filled the cistern on the land with water, and provided fences around the trees. On a larger scale these expenses would be significant. **Goats** make fences necessary, but they even broke through one of the fences. The risk of goats destroying planting efforts thus always exists. **Daily time investment** is required for weeding and watering the plants, but need not be more than 15 minutes.

So is planting fruit trees the solution to Coralita? It is part of the puzzle. Fruit trees do not kill Coralita, but using your land and weeding regularly does keep it out. Therefore, during a meeting discussing this project at Saba Comprehensive School the 31st of May, Sabans suggested to get a group of volunteers together. They would select a Coralita area, remove the bush, plant something nicer and maintain it together. And eventually, the trees might cast shade that which Coralita doesn't like. Speaking of which...

Judit's shading experiment

End of March, Judit came to Saba and set up an experiment on the effect of shade on Coralita growth and germination. She planted clippings of the bush in pots, and placed seeds on plates, covered in mesh of different degrees of transparency. She would then monitor in which shade intensity the seeds sprout most, and clipping grew most. And of course, as with any scientific experiment, she got some unexpected results, although still tentative. She saw more germination and regrowth with seeds under higher shade intensity, which runs counter to what you observe in nature. Is it because thicker mesh decreases evaporation?



With the temperature in the pots? Or is this a strategy of Coralita? We cannot say based on this experiment, and would have to do more research. Judit is travelling back to Utrecht to write her master's thesis, and had a great time on Saba. We thank her for all her work!

Judit's set-up. Lower shade intensity (left), higher shade intensity (right). Picture credit: Judit Planas i Puig

Research updates from Elizabeth

After taking a break from studying, Elizabeth's research has started up again and she has exciting news for Saba! On 16 August 2017 a new WorldView-3 satellite image was taken of Saba and purchased by the Coralita Girls' research group. This image has a spatial resolution of 2 meters x 2 meters, which calculates to 25 million pixels of data on Saba that the Coralita Girls can use! Elizabeth is just getting started with preparing the image for analysis, and she plans to use this image in conjunction with a similar image purchased of Statia to identify where Coralita is growing. Specifically, she has already developed a model to predict where Coralita is growing on Statia, and she will apply this model to Saba. The GPS points that Elizabeth, Jetske, and supervisor Maarten collected earlier on Saba will serve to check the accuracy of the applied model.



The WorldView-3 satellite image taken of Saba on 16th of August 2017

Elizabeth is also very interested in how Coralita interacts with the other plants and animals in the environment. Does Coralita exclude certain plants or animals? Does it attract other plants and animals? How does Coralita impact the diversity and abundance of plants and animals where it is growing? Does Coralita have impacts on non-living things in the environment, such as soil nutrients, light availability, and water drainage? These questions, along with others, are what Elizabeth and collaborator Wendy Jesse, a PhD candidate from the Vrije Universiteit in Amsterdam,

are working on. They hypothesize that Coralita has strong impacts on several groups of species, such as lizards, insects, spiders, and plants. They have already collected several datasets on Statia, and they plan to augment these data with plant data that Elizabeth will be collecting on Statia this coming fall. With these datasets, we hope to draw a comprehensive picture of the changes that Coralita brings to the environment where it invades. Although this research project is based on data from Statia, parts of it are useful to Saba because the two islands share some common groups of species, such as *Anolis* lizards, native and introduced bees, and dry forest plant species. One goal of this research project is to provide information for conservation decisions. For example, if managers are keen on preserving habitat for iguana nesting sites, and Coralita is known to overgrow these places, then conservation managers can focus their attention on controlling Coralita near known iguana nesting sites.

What's next?

Jetske is returning to Utrecht on the 13th of June, to analyse the results of the lemon tree experiment. Also, she is working on a literature review of factors that influence successful management on invasive alien species. Also, it has been 1½ years since Elizabeth has traveled to the Caribbean, so it is about time that she returns! There are tentative plans for a trip to Saba this fall, which hopefully becomes reality. Elizabeth would like to present the results of the research that she has been working on and enjoy Coralita-based activities with the citizens of Saba. In the meantime, you will hopefully be inspired to plant some fruit trees, vegetables or flowers in your yard, to slow down Coralita.

Any questions left?

You know where to find us! Email Elizabeth (e.a.haber@uu.nl), email Jetske (j.vaas@uu.nl), whatsapp Jetske (+31 6 49770829), or phone Jetske (+599 416 9319) with any of your questions. And follow [The Coralita Girls](#) on Facebook to stay updated.

Thank you!

We rely on your support to collect our data, and are very thankful for your interest, willingness and patience in working with us, and hope together we can slowly start combatting Coralita!