

Nectar flows start in Aiken, SC and Athens, GA

How much does a swarm weigh? Part II

Welcome **Mark and Noah** near Beaufort/Jasper. Thanks for getting SC005 online!

By the middle of the week, hives in Aiken, SC and Athens, GA finally started gaining weight. By the end of the week, hives near Asheville, NC were also registering daily gains.

Heavy flows are being recorded near Newnan and Sharpsburg, Ga (GA005 gained 11 lbs on 4/13) and York, SC (SC003 gained 7 lbs on 4/12). The flow in Sharpsburg started about 2 weeks ago but stopped 4/7 – 4/9 due to heavy rains and cool temperatures. During the last 2 weeks, GA005 gained 68 lbs.

The two hives in Redwood City, CA both gained weight, approximately 8 and 13 lbs for the week.

On the coastal plain, the hives near Charleston and Beaufort/Jasper continued to loose weight.

Swarming continued in the Southeast and in California (See page 2).

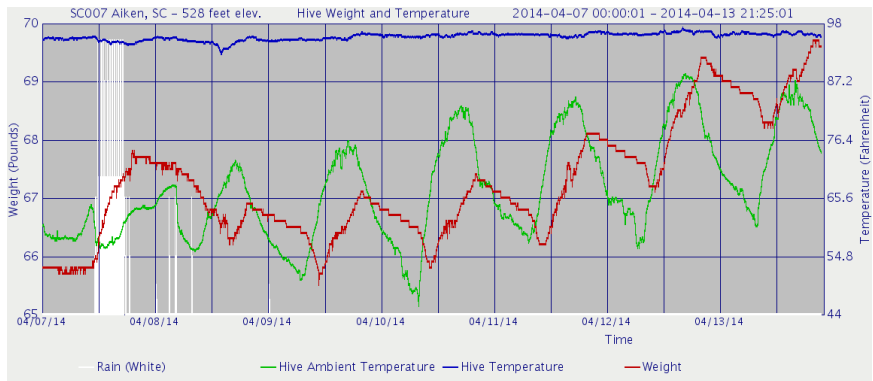


Illustration 1: Nectar flows started in Aiken, SC and Athens, GA.

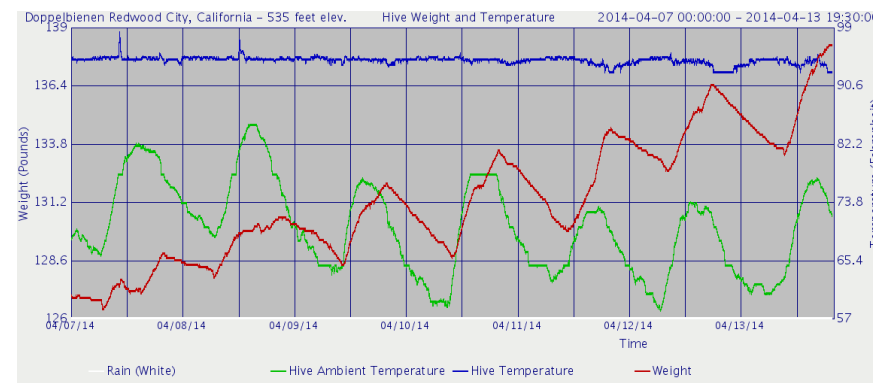
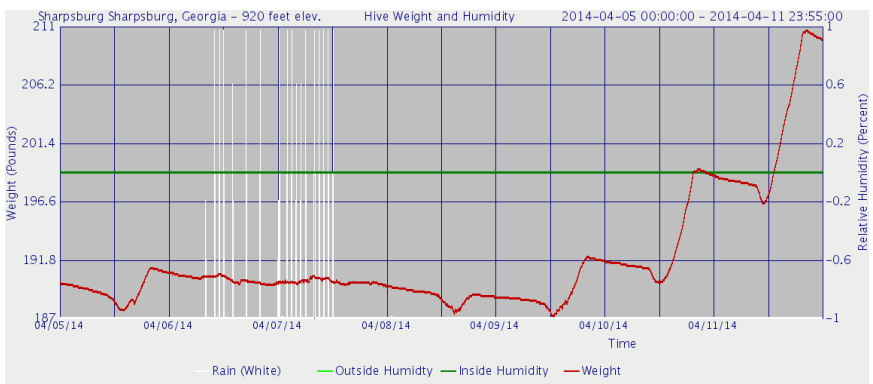
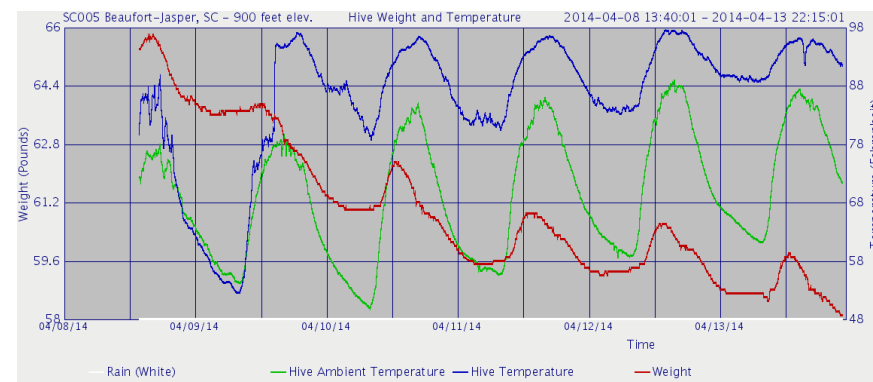


Illustration 3: Redwood City, CA. also had good nectar flows.



How much does a swarm weigh? Part II

Two weeks ago, SC006 in Walhalla swarmed, and left us puzzling data.

Note how the hive humidity rose well before the swarm left the hive, even though the outside humidity was dropping. The hive temperature started to rise before the swarm left, peaked just after the swarm left, and then slowly returned to normal.

Dr. Seeley suggests the following interpretation:

As more and more bees warm up their bodies in preparation for departure the heat load inside the hive increases. The bees increase the amount of evaporative cooling so the humidity rises. Swarming causes a temporary breakdown in hive ventilation so the hive temperature increases after the swarm departs.

During the last 21 days, there were two confirmed swarms from SC006 in Walhalla, SC.

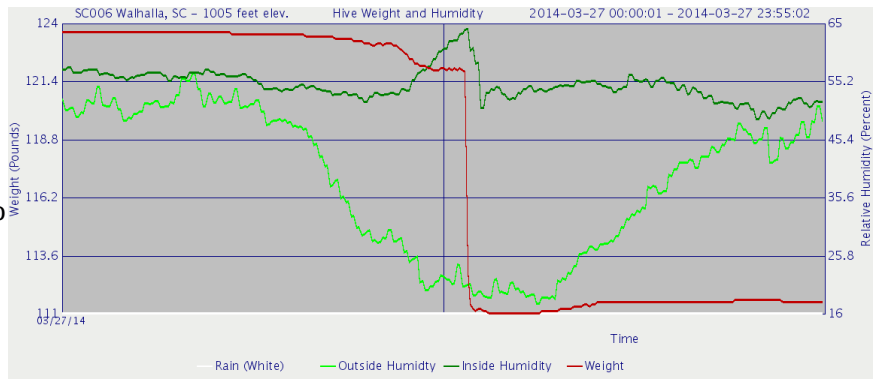


Illustration 5: Hive weight and humidity.

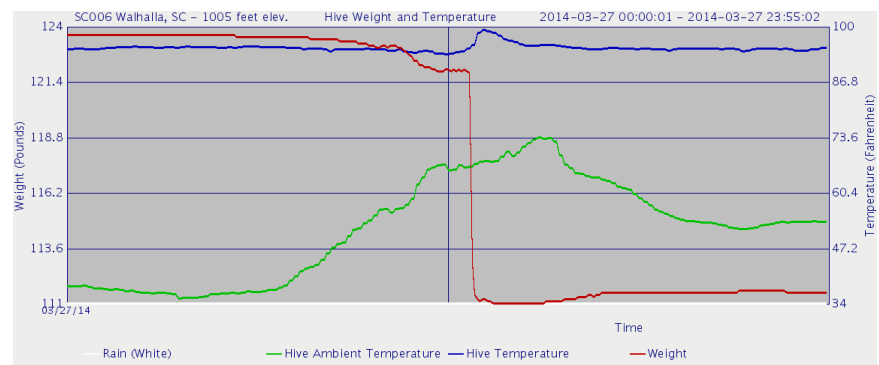
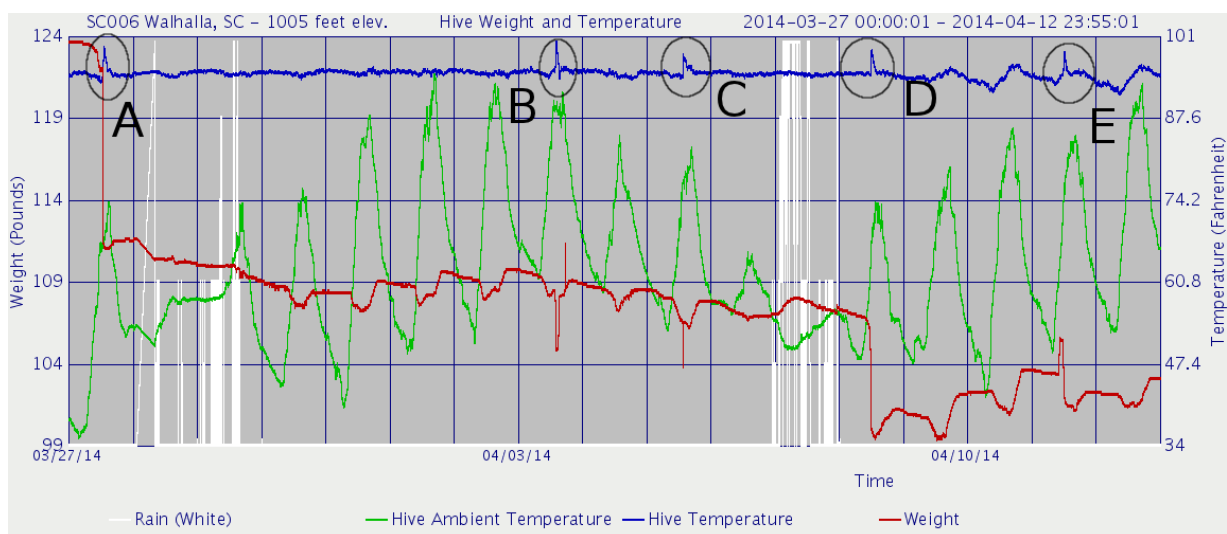


Illustration 6: Hive weight and temperature.

The first one on the 27th was 11 lbs (A). The second one on the 8th was about 7 lbs (D). Notice the additional spikes on the the hive temperature on the 3rd (B) and 5th (C). Looks they were up to something. (Had we not seen the spikes on the temperature curve, I would have attributed the weight spikes to hardware glitches.)



The uptick in weight on the 11th was Danny adding a queen excluder. But, notice the temp spike and drop in weight (about 4 lbs) an hour later (E). That could have been a third swarm. I have no idea why the weight briefly spiked up on the 3rd (B) after the "attempted swarm".

One final swarm story. On April 8th Bryan reported a “strange day”. The 4.5 lb loss was probably a swarm. The temperature increase helped confirm it.

The next morning, Bryan went searching: “Well look who I found this morning! Over the neighbor's fence about 20 feet from the mother hive. *No way I would have known they swarmed without the scale. The foraging activity looked pretty much the same pre and post swarm.*”

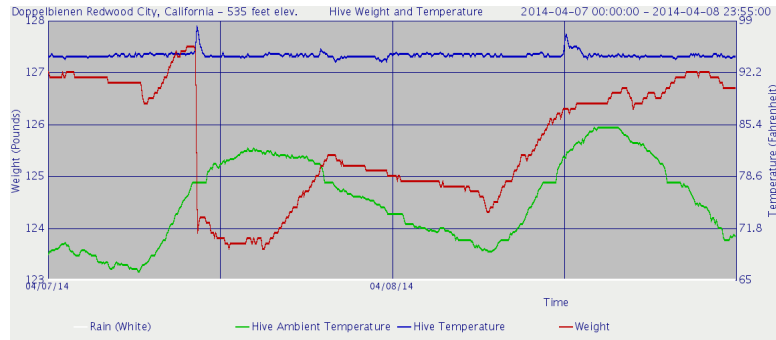


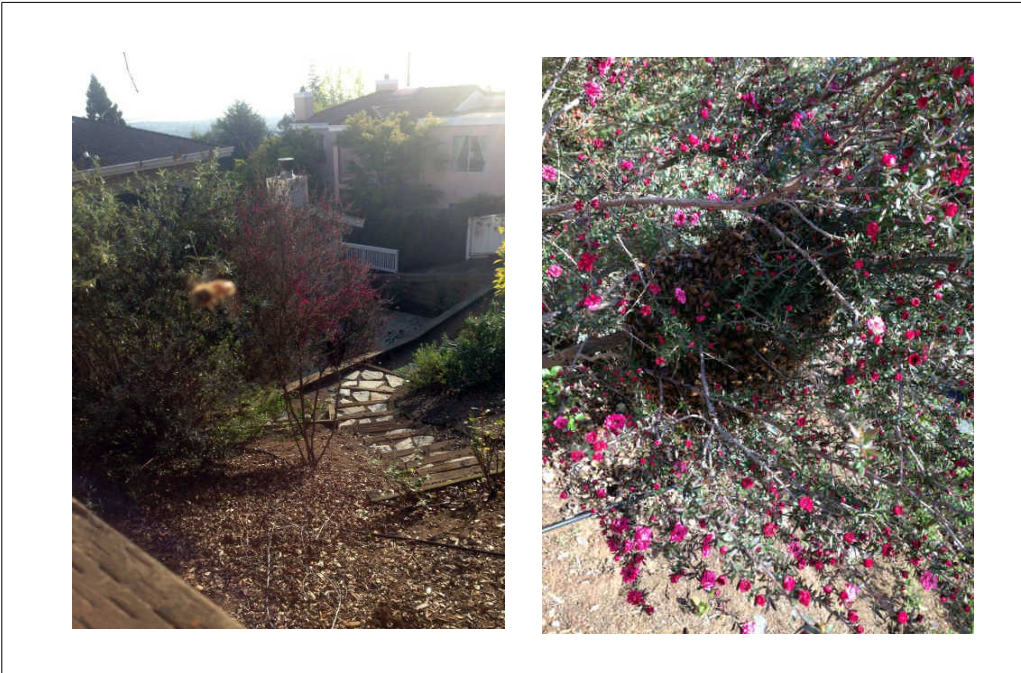
Illustration 7: Swarm. Note temperature rise

Bryan estimates the swarm could sell for \$100. Not a bad Return on Investment. We'll save the ROI analysis for another report after we have more data.

We hope to soon start analyzing the weight, temperature and humidity data real time and send email alerts when a swarm is detected.

WARNING

If the NASA weight filter is on, the swarm will be falsely detected as a manipulation change and filtered out.



Evaporation Rates

Can water and different nectars be identified based on their evaporation rate?

Compare the weight loss at night for these two hives. GA006 (Newnan) has a slight negative slope and loses about 25% of the previous days gain. There is a well defined drop the next morning when the bees leave.

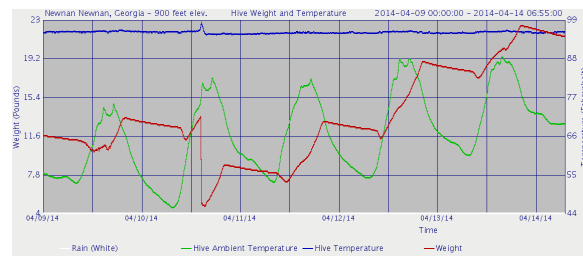


Illustration 8: GA006 Newnan GA

GA003 (Athens) has a much steeper slope and loses about 60% of the previous day's gain. Instead of a U shaped curve the next morning when the bees leave, there is a sharp V.

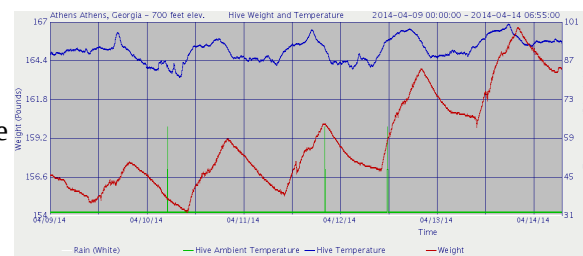


Illustration 9: GA003 Athens, GA

[Scott, did you know your hive swarmed Thursday, April 10th. Previously, I would have thought this was a manipulation change, but see the tick on the hive temp?]