

Bee a Part of The North Carolina Hive Monitoring Network Project

Hello, My name is Alex Jones - founder and CEO of Apiara Hive Technologies in Portland Maine. Two years ago I started a company to make it easier for backyard beekeepers to understand the health and vitality of their hives to fight the devastating effects of CCD, Pesticides and the Varroa Mite with the help of technology.

Since that time, my team and I have developed a web connected hive scale system to monitor the health of honey bee colonies by simply measuring the weight of the hive continuously throughout the day tracking the activity of foragers and measuring the amount of nectar coming into the hive. Using weight to monitor honey bee colonies is nothing new, it's been in practice since 1902 and there are many electronic hive scales on the market today for several hundred if not thousands of dollars.

Our mission is to bring tools that have previously only been available to Academic and Corporate research to the people who are truly on the front lines of pollinator stewardship, America's Backyard Beekeepers. We believe that with better insight into colony performance backyard beekeepers can improve their colonies' productivity to produce stronger healthier hives and reduce annual losses - this year alone reaching over 40% on national average.

We are reaching out to North Carolina's Beekeepers to join us in building a new regional network of devices to track a baseline for colony health across the state and help improve our software that will enable early identification of ailing colonies. With recent grant funding from the Maine Technology Institute, **we are able to subsidize this project by 90%** and we are looking for 50 participating beekeepers interested in monitoring two colonies each for only a \$150 registration fee.

As part of the project, each beekeeper will receive a complete system to monitor the weight and activity of two hives within range of wifi access. The data from these hives will be displayed through each participant's online dashboard and accessible for raw data download. In addition each hive will be placed on an online map for North Carolina Beekeepers to observe the progress and share results we find on regional colony health through the process.

We're sure you have plenty of questions so we've developed an easy to read FAQ below to get you answers. **We have 50 spots available for participating beekeepers so please reach out to us as soon as possible by going to www.Apiara.com/ncproject/application** or by contacting our project coordinator Michael@Apiara.com for more details.

**Thank You For Your Support,
Alex Jones and the Apiara Team**

Frequently Asked Questions

Below are some of the most common questions we've received from initial talks with club leadership in the North Carolina region. Please feel free to reach out to us directly for more information.

Why North Carolina, aren't you from Maine?

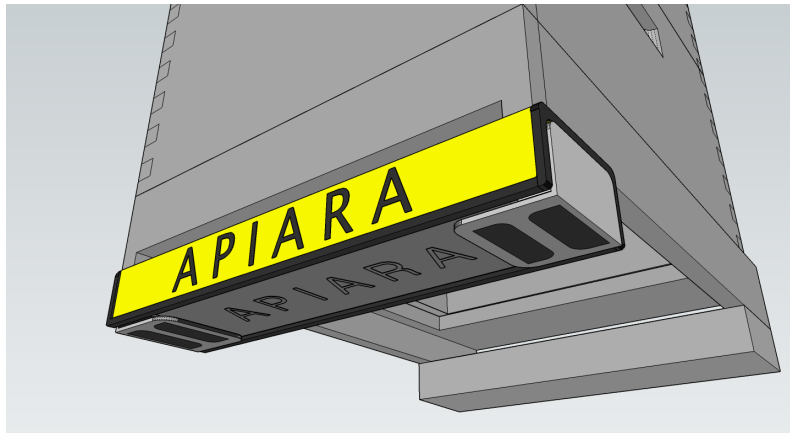
To be honest, it's cold up here! We currently have existing networks in both Maine and Delaware, but with our short season we've found it necessary to head south to gather the amount of data we need to help everyone's hives across the country.

What are you doing with the Data?

Apiara's focus is to develop a software system that can identify and rank colony health on a per hive basis using performance data aggregated from several hive monitors within a geographic region. Our goal is to understand what is "normal" colony activity and provide early warning systems to backyard beekeepers when colonies are declining.

How did you start?

We began building web connected hive scales to monitor nectar flows and dearth periods to inform precision feeding schedules. This project is still under way and we currently track nectar flows between our networks in Delaware and Maine as they move up the east coast.



Equipment

How Does the System Work?

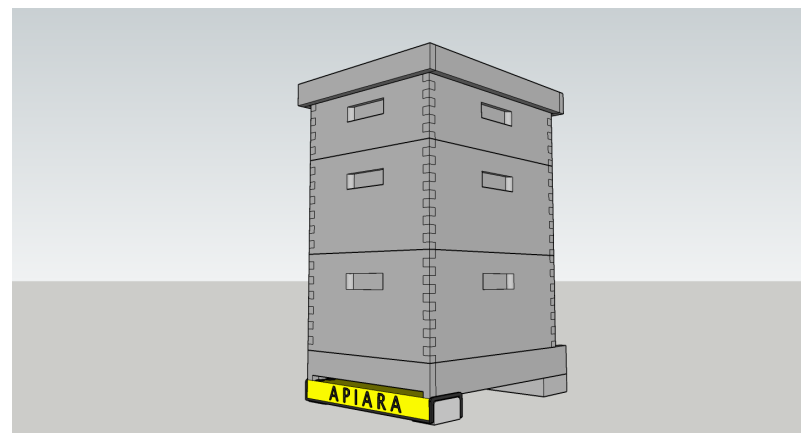
Each system comes with two hive monitors that connect to your home's wifi. The hive monitors are fiberglass channels embedded with weight sensors to measure the weight of each hive every 5 minutes. Each hive has one monitor set under the rear of the bottom board.

How close do I need Wifi?

75 Feet is an ideal distance to your home's wifi for a clear signal. Longer distances with a clear line of sight have been successful.

How long do the batteries last?

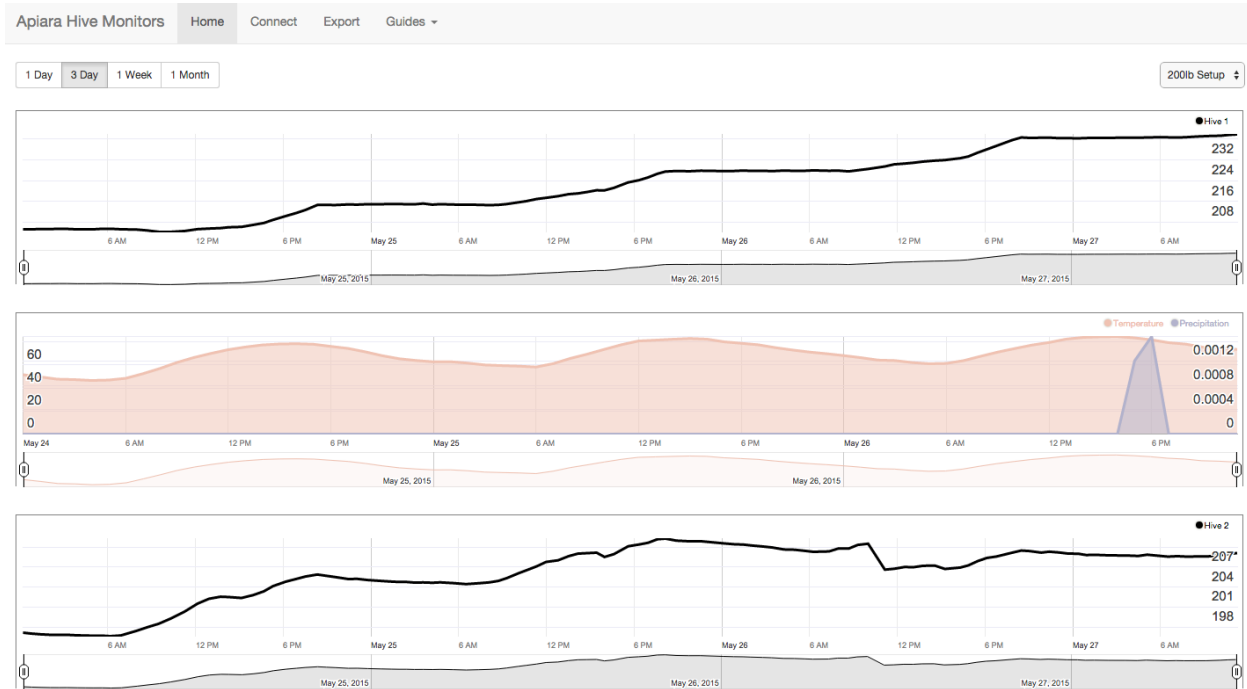
The system will last for 12 months without a battery change. We may be utilizing solar panels in this design as well.



Web Interface

How do I access the data?

Each participant will access their hives' data through our online dashboard with two trend lines for estimated hive weight and a separate chart for recent temperatures and rainfall.



Can I download the data in Excel?

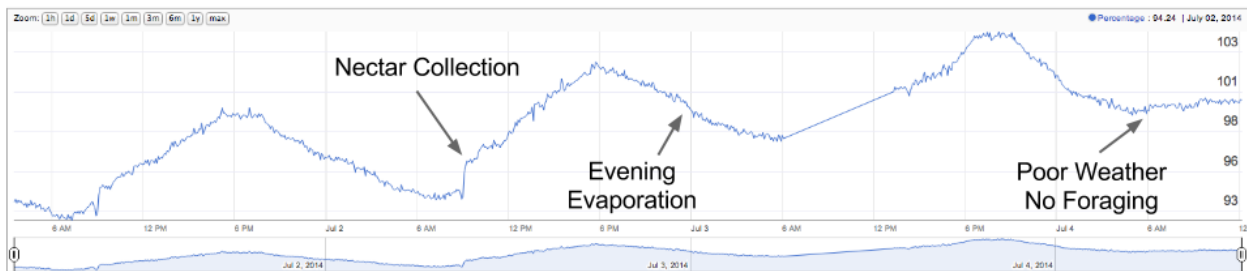
Yes, you will be able to download raw weight data into Excel or any other spreadsheet using our CSV Data export tool.

Who owns the data?

For the scope of this project we are operating under a shared use data agreement. In plain english, you own your hives' data and we have equal rights to use it as well. Any new data generated from observations of the aggregate of hives in the network will be owned by Apiara.

What does the data mean?

This chart shows a normal pattern of hive weight and activity over several days.



Payment, Product and Shipping

What do I get for my \$150 registration fee?

This project has been subsidized by the Maine Technology Institute for up to 90% of the project costs. Your registration fee goes toward a 10% portion of the equipment cost, as well as customer support and maintenance for 1 year.

Do I get to keep the monitoring device?

Yes, you get to keep your equipment and basic monitoring service for the life of the product.

How does payment work?

We will be sending you a link to pay by credit card when you register. **You will not be charged until your unit is shipped.** We do require that you submit your payment information to complete your registration and hold your spot.

When do you expect to begin shipping the devices?

We are planning on starting this project in late July to early August 2015.

Company Info

Are you a non-profit?

No, we are not a non profit. Apiara Hive Technologies is an early stage company with a big idea and a mission driven focus.

What's your experience?

Over the last two years we have developed regional hive monitoring networks in both Maine and Delaware, raised \$65,000 and built over 150 devices to date. Our founder Alex Jones is also a development lead with the Bee Informed Partnership, a nationally recognized honey bee research lab and statistics center. Alex's work with BIP focuses on developing services for non-commercial beekeepers through software that engages backyard beekeepers to share best management practices with the community to improve national honey bee health.

Are you affiliated with other hive monitoring networks?

No, currently we are not affiliated with other projects as we're focusing on our software development and tools to improve early detection of failing colony health. In the future we do see opportunities to work with other monitoring networks and have existing relationships with several research groups across the country interested in our results.