

# Monitoring beehives in Chile

## Challenge

The client of [Geotrace SpA](#) is involved in the honey production and pollination of plants and trees by bees. The company addressed the Wialon partner in Chile to get the solution that could prevent and control the beehive diseases, unauthorized movements of beehives, and their thefts.

The inability to control the temperature and humidity inside the beehives has already led to the loss of 50 units, which is \$4,000 for the beehive cost itself and \$11,000 in future possible production. Besides, in case of a serious disease, the company has to eliminate all the affected bee families. Additionally, such a thing as the theft of 100 beehives cost the company not less than \$23,000 loss.

## Solution

The Geotrace specialists offered the HiveTrace solution that controls temperature and humidity inside the beehives sending this data to Wialon. Monitoring these parameters keeps bees healthy. The solution also monitors the beehives' location and their movement status. Thus, the responsible workers can understand if all the beehives are where they have to be or someone relocated them. The data is recorded every two hours and is presented in Wialon in the form of charts and graphs.

### Project stages

- In the first stage, the partner collected customer requirements, analyzed them and decided on the devices.
- In the second stage, specialists started getting temperature and humidity values from the installed devices.
- Then they conducted walkthrough tests with the [Nimbelink](#) asset tracker.
- The final stage featured tests in functional beehives and data reception in Wialon.



The uncommon condition that the Geotrace had to deal with was the least possible interference in the life of the beehive and its daily operation. So, specialists had to define the best hours to do installations as well as the best time weather-wise. The problem of finding the optimal place to install the device had also to be addressed.

### Plans

The partner is planning to upgrade the solution to be able to count bees. This data allows understanding if the hive is healthy and improves pollination. The use of weight sensors will help to know if the amount of honey produced is optimal at the moment or something needs to be changed. The Wialon-based development for [online monitoring](#), generating reports, statistics, graphs is also on the way.

## Results

The solution developed by Geotrace helps control the location and well-being of beehives.

### ✓ No thefts

Since HiveTrace was implemented, no thefts were reported.

### ✓ Temperature and humidity control

Monitoring these parameters helped prevent the proliferation of diseases.

### ✓ Savings

The client stopped losing beehives and consequently the product that these bees can produce.

### Company profile

**IoT project of the year nomination:** Stationary objects

**Country:** Chile

**Industry:** Agriculture

### Solutions

Wialon

### Hardware

NimbeLink

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