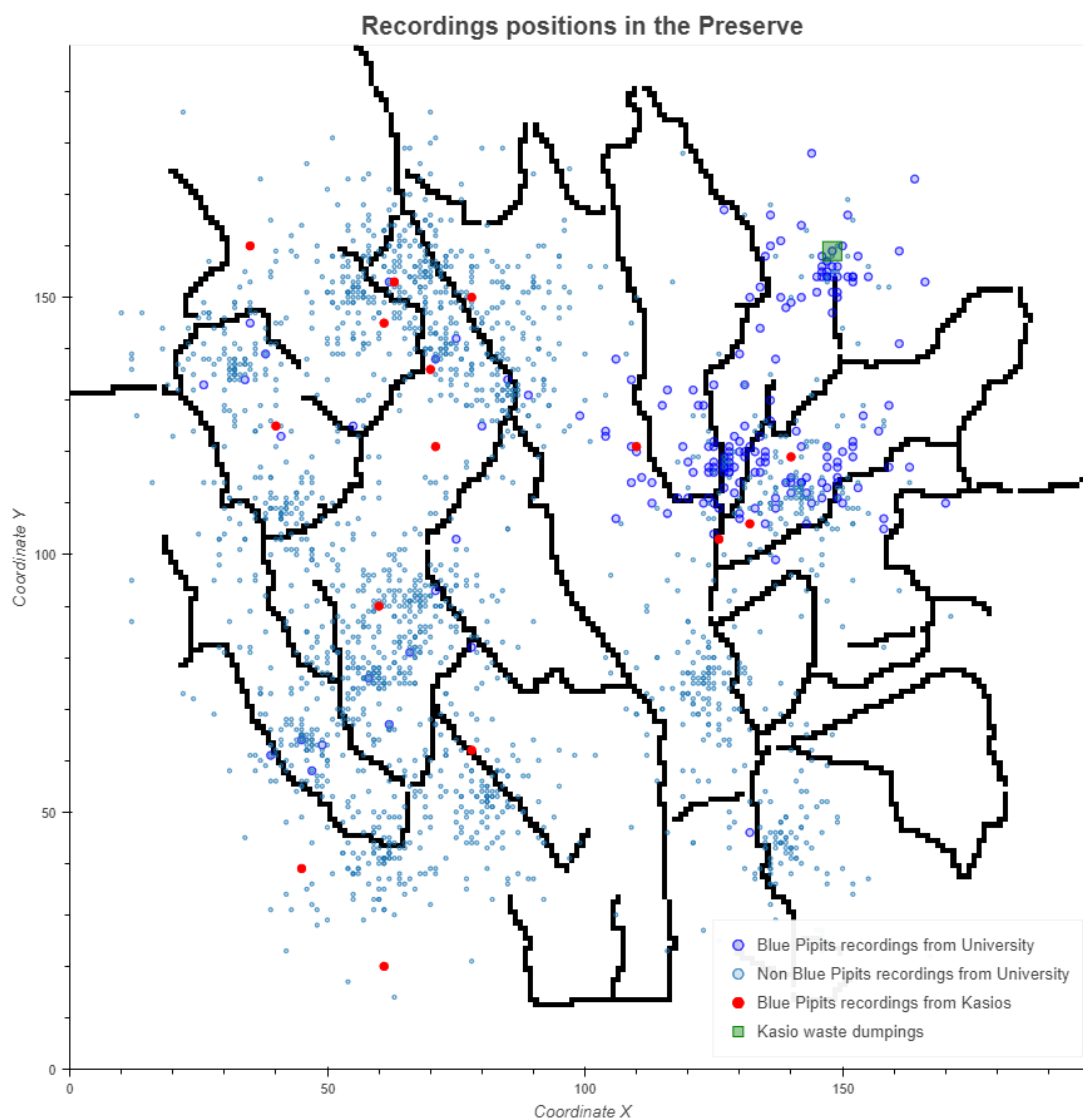# Assignment 1 report

Our goal during this project is to help deciding whether Kasios has effectively provided recordings of Blue Pipits from the Legakul preserve that could corroborate their statement.

Here are the questions we want to answer:
- Are the recordings provided by Kasios, actual recordings of blue pipits ?
- If so, have they been recorded recently ?
- If so, have they been recorded in the Legakul preserve ?

The image below is the map that we have constructed for the assignment 1:

Recordings positions in the Preserve

Our goal as a preliminary study of the data was to display on a map of the Legakul preserve all the spatial information that we have been provided with in order to build our first hypothesis and establish a strategy for the rest of our study.

- the position of the 2081 recordings from 19 different breeds of birds living in the preserve, that have been provided by the university as a reference data.
- the position of 15 recordings provided by Kasios, that they claim as being taken from Rose-crested Blue Pipits living in the preserve.
- the position of the alleged dumping site for Kasios waste products.

Blue dots represent the position of the recordings provided by the university. Because displaying each breed in a unique color would not have allowed us to visually distinguish our target, we have decided to display all the recordings in a blue color and only differentiate blue pipits with a darker blue and bigger dots.
We have located the recordings from Kasios with red dots to contrast with the blue color from the university recordings and allow us to easily visualize those 15 dots that we want to analyse.
Finally, we have plotted the location of the toxic dumping with a green square.

Important notice: We have additional metadata for the university recordings such as the type of vocalization, the quality of the recording and the date and time of the recording.

Next follows our observations, our first hypotheses and the next steps we will take to answer the challenge:

➢ **Observation 1:** Blue pipits recordings from the university are massively located in the upper right area of the map, only few are located in other areas of the preserve.

Hypothesis 1: Blue Pipits were initially living in the upper right area but have migrated towards the rest of the preserve because of Kasios waste dumping. This would be a proof that Kasios dumping have an impact of Blue Pipits.

→ STEP 1: We have to analyse the position of the recordings with **regards to the date** of the recordings.

➢ **Observation 2:** Recordings from Kasios are located all over the map and only 4 recordings are located in the upper right area.

Hypothesis 2: Blue Pipits have not migrated and are still living in this upper right area. Then the positions of Kasios recordings are suspicious since they do not fit with the area where blue pipits are located. That would allow us to think that Kasios recordings are not recordings of Blue Pipits.

→ STEP 2: We have to **classify** these recordings. Training a classifier on the university recordings would allow us to predict whether Kasios recordings are Blue Pipits or not.

Hypothesis 3: If Kasios recordings are positively classified as Blue Pipits, they might not have been recorded in the Legakul preserve.

→ <u>STEP 3</u>: Analysing the **background noise** of each recording and comparing them to recent university recordings taken in that same area would help us determine whether Kasios recordings have been recorded in the Legakul preserve or not.