



VAST Challenge 2018 MC2



Mini-Challenge 2 Overview: Like a Duck to Water

Last year, the Kasios Furniture Company was implicated in environmental damage to the Boonsong Lekagul Wildlife Preserve for both dumping toxic waste and polluting the air with chemicals from its manufacturing process. But Kasios is not taking these accusations lying down, and they deny any accusation of industrial waste dumping! Kasios' spokespersons state that there isn't any ground contamination near the remote ranger station that was suggested by last year's mini-challenge 1 and 3 participants, and they have inspected that area and found it as pristine as the rest of the preserve.

Outraged ornithology professors from Mistford College journeyed out to look over the dumping site themselves and perform soil analyses. They returned to report that the site looked like there had been recent excavation and building activities going on. Boonsong Preserve rangers later confirmed that a new ranger station was being built at that site! Soil samples taken from the site were inconclusive in detecting Methylosmolene (the toxic manufacturing chemical in the suspected dumping) or any other contaminant, as new top soil had been trucked in.

With a primary piece of evidence against Kasios now gone, investigators will need to take another approach. Professors in the Mistford College Hydrology Department have come forward with several years of water sensor readings from rivers and streams in the preserve. These samples were taken from different locations scattered throughout the area and contain measurements of several chemicals of possible interest, but they have never been analyzed due to lack of funding. Could visual analytics help reveal something in this data that could make up for the soil evidence that was destroyed?

Your task is to investigate the hydrology data from across the Preserve. You are given a map of the Preserve (with the same base as last year's challenge), with named sampling sites indicated on the map (the names have local significance, but are just mnemonics for your study) You are also provided with readings from each sampling station over time for several different chemicals and water properties.

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Questions

1. Characterize the past and most recent situation with respect to chemical contamination in the Boonsong Lekagul waterways. Do you see any trends of possible interest in this investigation? Your submission for this questions should contain no more than 10 images and 1000 words.
2. What anomalies do you find in the waterway samples dataset? How do these affect your analysis of potential problems to the environment? Is the Hydrology Department collecting sufficient data to understand the comprehensive situation across the Preserve? What changes would you propose to make in the sampling approach to best understand the situation? Your submission for this question should contain no more than 6 images and 500 words.
3. After reviewing the data, do any of your findings cause particular concern for the Pipit or other wildlife? Would you suggest any changes in the sampling strategy to better understand the waterways situation in the Preserve? Your submission for this question should contain no more than 6

images and 500 words.

Download the Submission Form and the Data

Click on the link below to see the Submission Instructions. Enter your email in the box below to download the data for this mini-challenge. This email will be used if the conference organizers need to contact you regarding any corrections to the mini-challenge.

[VAST Challenge 2018 Submission Instructions](#)

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