Malaria, caused by the *Plasmodium falciparum* parasite and spread by *Anopheles* mosquitoes, continues to be a major global public health concern, causing 241 million cases and 627 thousand deaths in 2020 (WHO, 2021). Within the Greater Mekong Subregion (GMS) the prevalence of malaria has declined dramatically since the early 2000s and the region is progressing towards eradication; although malaria remains associated with forests and forested fringes, the ideal habitat for *Anopheles* mosquitoes. In this study, we explored how Google Earth Engine (GEE) can be used to identify the possible habitat for *Anopheles* mosquitoes via web-based application or using programmatic workflows to export raster data for offline analysis.

The habitat identified using GEE is similar to the habitat identified by Obsomer et al. (2012) although more work is still needed to quantify the differences and evaluate change over time. However, more work is needed to explore uncertainty in the projections and how to communicate them to users given that pixel resolution impacts result (e.g., decreasing pixel resolution from 1 km² to 25 km² results in an increasing in from 30,712 km² to 67,372 km², but 443,931 km² to 445,275 km² for forest). With properly quantified uncertainty and an effective means of communicating it, the GEE app has the potential to be useful to policymakers in the GMS region. Expansion of the GEE app to other parts of the world is possible but will require an expanded workflow to ensure that landcover classification is regionally appropriate.

**METHODS**

Using environmental envelopes for *Anopheles* species in the GMS (Obsomer et al. 2012), a workflow was developed for GEE (Fig. 2) that uses precipitation (CHIRPS Pentad), temperature (MOD11A1.061), and imagery (Landsat 7, 8) to identify the possible habitat. The workflow begins by first delimiting the potential habitat based upon the environmental conditions, followed by landcover classification using a manually trained Classification and Regression Tree (CART). Potential habitat that contains forest is then classified as suitable habitat for a given *Anopheles* species. When using the web-based application results are presented to the user directly (Fig. 1); however, when accessing GEE via the Python API, results are saved as a raster in a Google Drive for later retrieval.

**REFERENCES**
