Survey of Endangered *Castanopsis* in Java, Indonesia

Project Update (June 2025)

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Introduction

This report presents the preliminary findings of a field survey focused on endangered *Castanopsis argentea* (Saninten or Sarangan) and *Castanopsis tungurrut* (Kalimorot or Tungeureut), conducted as part of the field validation for the initial species distribution models. The survey also aimed to collect new distribution records of the target species across Java Island currently unreported. This interim report is intended to provide the Rufford Foundation as the fund provider with an early overview of the key findings and progress of the survey and research activities.

Core Survey Team

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Locations

The field survey was carried out across seven locations spanning from central to east Java, namely: Mt. Ungaran, Mt. Merbabu, Mt. Merapi, Mt. Lawu, Cangar, and Mt. Ijen, with additional of Mt. Ciremai in the western part **(Fig. 1)**. Survey efforts primarily focused on the lower montane zone, typically at elevations ranging from 1,000 to 1,500 meters above sea level (asl). However, observations at higher elevations were also conducted when field conditions permitted and were deemed feasible.

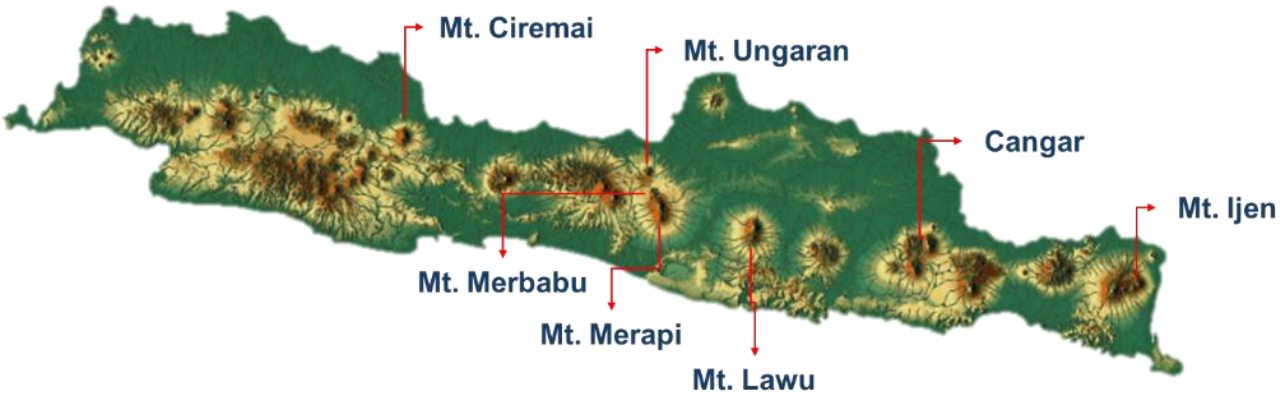

Fig. 1 Map of survey locations for species target on Java Island

Timeline

The initial fieldwork was carried out between April 20 – May 27, 2025. Each survey location typically required approximately three to four days of field investigation.

Methodology

Survey locations were selected based on a habitat suitability map developed through preliminary species distribution modeling using secondary data on the presence of the target species. A ground-based exploratory method was employed, consisting of traverses along established hiking trails and surrounding areas within each survey location (ridge, hillside, and along river). The survey approach was complemented by integrating interpretation of the species distribution projection maps and gathering local information from both local stakeholders and community members to enhance the accuracy and effectiveness of the field search.

During field observations, the following data collection activities were conducted:

1. Noting the specific block or site name where target species were found
2. Identifying surrounding vegetation and habitat characteristics
3. Recording the geographic coordinates and elevation of each individual observed
4. Measuring the diameter at breast height (DBH) and height of individual trees
5. Noting their phenological status (generative or vegetative)

Preliminary Findings

The survey recorded a total of 371 new individual *Castanopsis argentea* across all surveyed locations **(Table 1)**. It is important to note that this figure likely underrepresents the actual population size, as several areas with steep terrain and ridge systems remained inaccessible during this phase of the survey. Nevertheless, the presence data obtained is considered sufficient to represent the species' distribution within the specific forest blocks visited. Further surveys are planned to cover other unvisited blocks in the same regions to complete the assessment.

Table 1. Total number of target species recorded across survey locations on Java Island

Location	Locality	Species occurrences	
		C. argentea	*C. tungurrut*
Mt. Ciremai, Kuningan	Setianegara and Palutungan	28	0
	Argalingga Resort	70	0
Mt. Ungaran, Semarang	Kalisidi	0	0
	Promasan	36	0
	Gonoharjo	3	0
Mt. Merbabu, Boyolali	Ngagrong	4	0
	Guwelelo	5	0
	Ganduman	35	0
Mt. Merapi, Sleman	Bukit Plawangan	34	0
	Bukit Turgo	35	0
	Gunung Bibi	24	0
Mt. Lawu, Karanganyar	Tahura KGPAA Mangkunagoro I	85	0
	Sarangan Resort, KPH Lawu DS.	12	0
Cangar, Malang	Tahura Raden Soerjo	0	0
Mt. Ijen, Banyuwangi	Mt. Ijen and Erek-erek Geoforest	0	0
Total		**371**	**0**

Castanopsis tungurrut was not detected at any of the survey locations during this phase. Additionally, a previously undocumented morphological feature was observed in some *C. argentea* individuals, offering new insights into potential intraspecific variation within the species **(Fig. 2)**.

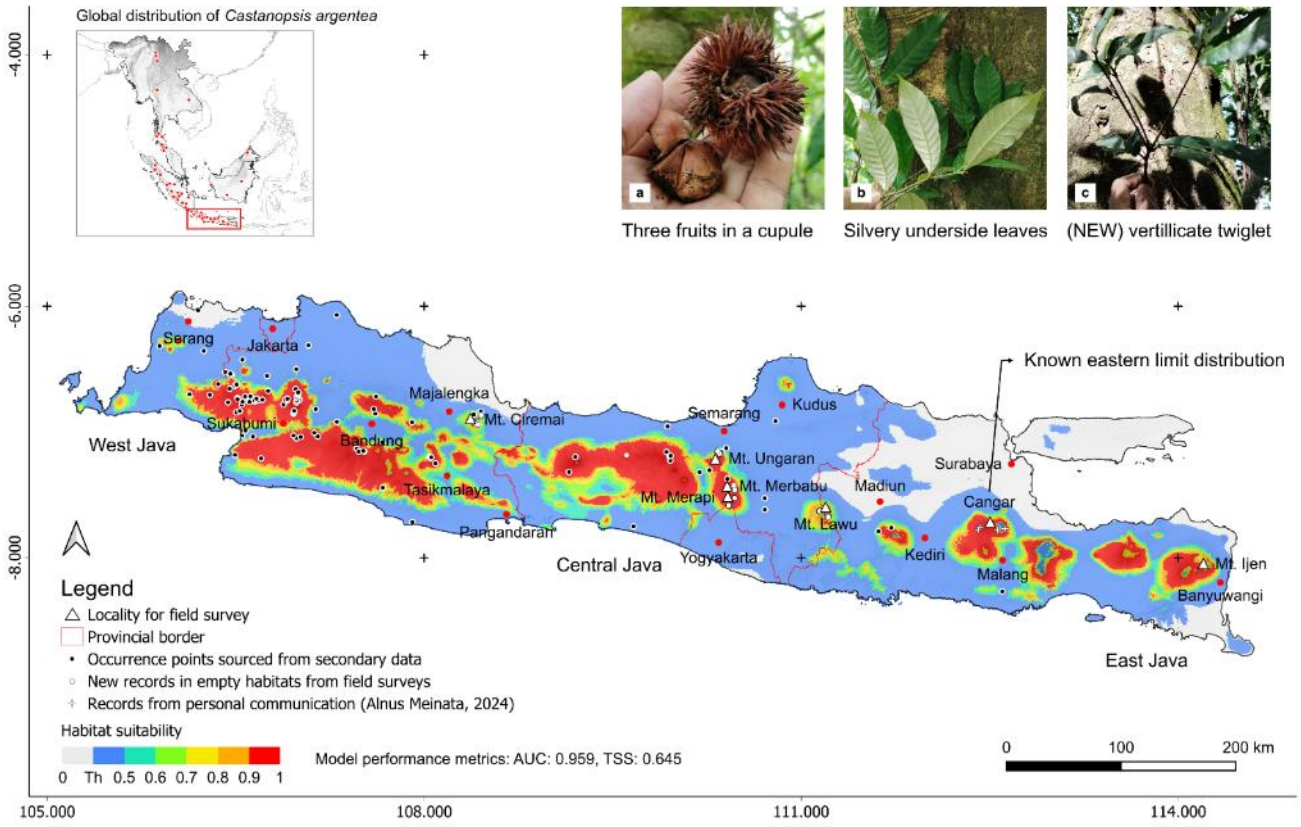

Fig. 2 Map of habitat suitability based on initial modeling, field survey locations, and field survey results of the new dstribution and a novel morphological feature records of *Castanopsis argentea* on Java Island

Follow-up Survey and Future Work Plan

A follow-up survey will be conducted in this June to obtain distribution data in other blocks (Table 2) will be continued to refine the initial model using a new occurence dataset.

Table 2. Further survey locatios in selected locations

Location	Locality	Notes
Mt. Ungaran	Ungaran via Camp Mawar	
Mt. Merapi	Resort Dukun	
	Resort Musuk Cepogo	Nggobumi, Njelo, Lendong
Mt. Merbabu	Resort Ampel	Timboa (priority), (Ganduman, Guwelelo, Ngagrong)
Mt. Lawu	Lawu via Cetho	Optional
Cangar dsk.	G. Argowayang	Flying camp around prev. records of target species
Mt. Ijen		Temporarily postponed
Mt. Ciremai	Ciremai via Apuy, to Palutungan	Climb to the top

Photographs

Morphological features of *Castanopsis argentea*

a) Dense canopy

a) Ganduman, Merbabu NP

b) Promasan, Mt. Ungaran

b) The bark is white and darkens slightly after some time

a) Tahura KGPAA Mangkunagoro I

b) The bark colour after some time, Tahura KGPAA Mangkunagoro I

c) Leaves are elliptical to oblong with a silvery underside

a) Bukit Turgo, Merapi NP

b) Ganduman, Merbabu NP

c) Arpesi, Argalingga, Ciremai NP

d) The leaf underside seen from below, Merapi NP

d) A spiny cupule and three fruits inside

a) Decayed fruit, Bukit Turgo, Merapi NP

b) Mature fruit, Merbabu NP. Credit: Jarot Wahyudi.

c) Mojosemi, RPH Sarangan, KPH Lawu DS

d) Closed decayed fruit, Palutungan, Ciremai NP

Field Work Photos

a) Team discussion for field surveys in Semarang

b) Field survey in Kalisidi, Semarang

c) DBH measurement in Bukit Turgo, Merapi NP

d) Field activity in Palutungan, Ciremai NP