

Mranak

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Species Richness of Spermatophytes in Mranak Forest Area of Mount Prau, Central Java, Indonesia

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Abstract. Forest clearing that has been used as agricultural land in Mount Prau is increasing. As a result, the sustainability of biodiversity, natural habitat of mountain forest and natural resources are increasingly under threat. However, green and natural landscapes of mountain forest can still be found in eastern and northern slopes of Mount Prau. Although at lower slopes already contain agricultural land, the rate of forest encroachment for conversion to agricultural land is relatively slow. Mranak forest in Genting Gunung village, Sukorejo sub-district, Kendal district is one forest area that still in good condition. This forest is one of the unofficial hiking routes to the top of Mount Prau. This study aims to assess species richness of seed plants (Spermatophytes) in the Mranak forest. The exploration method is used to assess plant species. Based on preliminary field study, four observation areas were determined at different altitudes (1600, 1900, 2100, and 2300 masl). The results found 124 species of seed plants belonging to 61 families. *Melastoma malabathricum* found in zones 1 and 4 (lowest and highest area). The two zones are indeed more open according to the habitat preferences of this species. The important species found in this research were Sarangan (*castanopsis* sp), *Corybas* orchid, and Edelweiss (*Anaphalis* sp). All three species are important because of their conservation status.

1. Introduction ³

Mount Prau is one of the mountains in Central Java with good tropical rain forest vegetation, which is located in the Dieng Plateau area, Central Java, Indonesia. Wonosobo 2011 - 2031. Mount Prau Protected Forest Area is located in Central Java Province. Mount Prau has an altitude of 2565 masl which is the highest mountain in the Dieng plateau and is located between three districts, namely Batang, Kendal, and Wonosobo Regencies.

The peak of Mount Prau is located at coordinates $7^{\circ} 11'13''$ LU $109^{\circ} 55'22''$ East Longitude. Forest clearing that has been used as agricultural land in Mount Prau is increasing. As a result, the sustainability of biodiversity, natural habitat of mountain forest and natural resources are increasingly under threat.

However, green and natural landscapes of mountain forest can still be found in eastern and northern slopes of Mount Prau. Although at lower slopes already contain agricultural land, the rate of forest encroachment for conversion to agricultural land is relatively slow. Mranak forest in Genting Gunung village, Sukorejo sub-district, Kendal district is one forest area that still in good condition. This forest is one of the unofficial hiking routes to the top of Mount Prau. This study aims to assess species richness of seed plants (Spermatophytes) in the Mranak forest.

2. Methods

The exploration method is used to assess plant species. Based on preliminary field study, four observation areas were determined at different altitudes (1600, 1900, 2100, and 2300 masl). Data collection techniques by observation and collection. The species found were identified using the key of determination. Findings are organized in the form of species descriptions.

3. Results and Discussion

The Mount Prau area of Wonosobo Regency is mapped into four main zones based on the height and characteristics of the area. The four zones are (1) top (2300 maspl), savanna area, open area with a minimum canopy; (2) middle B (2100 maspl), the narrower area; (3) middle A (1900 maspl) full canopy area; and (4) basalt (1600 maspl) the lowest area with very little open area.

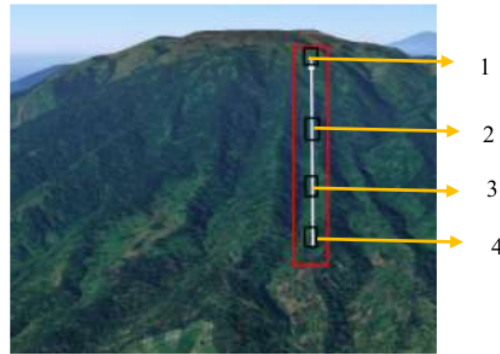


Figure 1. Mapping of the Track Zone of Mount Prau in Wonosobo Regency

The results found 124 species of seed plants belonging to 61 families. *Melastoma malabathricum* found in zones 1 and 4 (lowest and highest area). The two zones are indeed more open according to the habitat preferences of this species. The Important species found in this research were Sarangan (*castanopsis* sp), *Corybas* orchid, and Edelweiss (*Anaphalis* sp). All three species are important because of their conservation status.

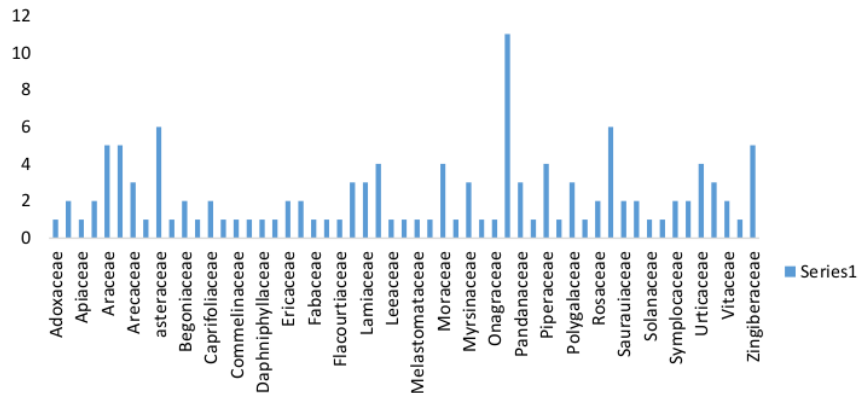


Figure 2. Distribution of Spermatophyta Groups in the Gunung Prau Area, Wonosobo Regency

Anaphalis longifolia or commonly known as the Edelweiss flower is a plant that belongs to the Asteraceae family. People call it edelweiss which refers to the name of the plant *Leontopodium alpinum* Cass. from the mountains of Europe. *Anaphalis longifolia* is scattered in the highlands of Indonesia which has an altitude of 1000-2000 masl. *Anaphalis longifolia* can be distinguished from other *Anaphalis* by its long, small leaves. The flowers are arranged receptively in the bud with the development of the petals which are centered and

circled by the bractea. The stems and leaves have thick fur which is a form of adaptation to cold environments and high places. Based on the IUCN redlist (2008), *Anaphalis* sp. included in the category of inthreathened or plants in a threatened condition.



Melastoma malabathricum L. ² belongs to the family Melastomataceae is one of the medicinal plants that are widely used by people in Asia. Has woody stems, round, hairy or scaly, branching simpodial, brown. Single leaf, ovate with pointed tip and base, flat edge, hairy and arranged opposite. Compound interest, with attached petals, short end from the base, tapered tip, reddish purple, with five oval crowns. The root is a brown taproot. People in Indonesia and Malaysia, use the leaves and roots of this plant to treat diarrhea, digestive disorders, dysentery, vaginal discharge (leukorrhea), hemorrhoids, wounds, toothache and canker sores.



4. Conclusion

The results found 124 species of seed plants belonging to 61 families. The Important species found in this research were Sarangan (*castanopsis* sp), Corybas orchid, and Edelweiss (*Anaphalis* sp). All three species are important because of their conservation status.

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