

## Kawasan konservasi di Sumatera: Ancaman, keterwakilan ekosistem, perkembangan, distribusi, perancangan, dan pengelolaannya

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### Abstrak

During the past thirty years Sumatra has undergone the highest deforestation rate in all of Indonesia. This is the result of the Indonesian forest management that mainly focuses on wood exploitation. In addition, the high rate of human settlements and unplanned development has accelerated the conversion of forests into palm plantations, rubber, coffee, tea and other crops. These conversions will ultimately decrease the biodiversity of Sumatra, therefore it is very important that effective conservation areas be placed to conserve the biodiversity of Sumatra.

This thesis is a compilation of two scientific papers entitled 1) The Decrease of Ecosystem Types and Its Representation in Conservation Areas of Sumatra and 2) Development, Distribution, and Management of Conservation Areas in Sumatra. The first paper discusses the causes of the area decrease of each ecosystem types and its representation in conservation areas and also to give recommendations if whether an ecosystem type is not represented. The second paper discusses area development and distribution of conservation areas in Sumatra from 1967-2000; analyses the level of management in conservation areas from the point of view of regional autonomy in governance, funding and human resources. Gap analysis and descriptive methods were used to assess ecosystem types that are currently represented in conservation area. Data is compiled from a variety of resources, mostly from competent institution, such as Dept. of Forestry, Dept. of Agriculture, Dept. of Transmigration, State Office of The Ministry of Environment, and Central Bureau of Statistics and non-government organizations (CIFOR, CI-IP, WWF, Wetland International, Birdlife, Walhi, and other local NGO's).

The main causes of degradation and shrinkage of ecosystems in Sumatra are illegal logging, extensive transmigration, illegal mining, plantations, and forest fires. The Sumatran ecosystems can be divided into 15 types. One of them-the heath forests has not been represented in any conservation areas. Seven types of ecosystem have less than 10% representation in conservation areas. They are: semi-evergreen rainforest (1%), ironwood forests (2%), peat swamp forest (2%), mangrove forests (4%), lowland evergreen rainforest (5%), freshwater swamp forests (6%), and tropical pine forest (7%). Six other ecosystems that are represented adequately (more than 10%) are: mountain moist forest (14%), lowland limestone forests (15%); sandy-beach forests (15%), sub alpine forest (21%), limestone mountain forests (29%), and coral reefs (30%). There is one ecosystem not discussed (rivers and lakes) because of the lack of data and information.

Ecosystems that aren't adequately represented in conservation areas are mostly in low land forest; these regions have in fact undergone deforestation and conversions. Adding conservation areas for these ecosystems can be done by legislating already existing conservation area proposals.

The development of conservation area management in Sumatra is towards the making of National Parks, which encompasses 75% (3.430.390 ha) of the total conservation areas (4.567.750 ha). Besides of being large, in area wise, national parks have more funding and human resources. Parks also accommodate the

various functions of conservation areas. Judging from its size, more than 81% (3.699.878 ha) of the total conservation areas in Sumatra are small (less than 50.000 ha) which spreads over low land areas, The distribution of conservation areas in Sumatra is 60% (2.653.000 ha) on high land areas.

Sumatra's national parks are funded averagely below parks in Java. Parks in Sumatra are run at an average of Rp 2.500 per hectare, where else in Java, it is Rp 37.000 per hectare. The same situation applies to ratio of land to human resources. In Sumatra one forest service employee must cover 3.500 hectares of park area, meanwhile in Gunung Gede Pangrango National Park (Java) one employee has to cover 158 hectares.

Noting the various problems in Sumatra such as illegal settlements, illegal logging, illegal cattle herding, poaching, forest fires and etc. the current condition is far from adequate. Even with limited funding, by utilizing management systems like ICDP (Integrated Community Development Project), IPAS (Integrated Protected Areas System) or Ecosystem Management, the goals of conservation will hopefully be reached.