Developing Assesment for Priority Wildlife Species in Mount Ungaran, Central Java Indonesia

Margareta Rahayuningsih, Andreas Budi P, Tsabit Azinar A

Abstract— Mount Ungaran area in Central Java was designated as Alliance for Zero Extinction (AZE) and Important Bird Area (IBA). However, recent years have seen serious threats in Mount Ungaran and surrounding areas disturbing the species, such as habitat fragmentation, forest clearance, logging, poaching and ilegal trade of wildlife. Therefore, protection efforts, preservation, and sustainable use in Mount Ungaran must be optimized. The objective of the study was to develop assessment for priority of wildlife species in Mount Ungaran to support biodiversity conservation. The early research start from January 2017- April 2018. The method of research was used eksploration and secondary data through previous research results and interviews with the community in Mount Ungaran. The assessment of priority wildlife species was developing from the priority species regulation and jointed with the IUCN and CITES Red list. There are six category (endemic species, IUCN, CITES, habitat, threatened, and management status) and 22 factors to determine priority species. Scores for each factor range from 5, 10, 15, 20, and 25. The first assesment result showed there are six taxa that can determine to priority species: Odonata, Lepidopytera, Amphibia, Reptile, Aves, and Mammalia.

Keywords—Assesment, priority wildlife species, Mount Ungaran, in situ conservation .

I. INTRODUCTION

THE diversity of Indonesian flora and fauna species, attracts the attention and admiration of various parties in Indonesia and around the world. Unfortunately that the attention and admiration do not always bear positive things for the species. In fact, what often happens is the irrational exploitation that leads to the endangered existence of the species in the nature. Harvesting of plants and animals (for hunting and trading) is one long-standing practice. Also, clearing of forest land for other purposes is a major contributor to the population decline and even the extinction of the species. It also happened in Mount Ungaran of Central Java which still has the great natural forest in Central Java. There have several of protected, endangered, and endemic flora and fauna species. Mount Ungaran area was designated as Alliance for Zero Extinction (AZE) and Important Bird Area (IBA) [1][2]. The preliminary study showed that the Ungaran Mountain forest area is a suitable habitat for the existence of several flora and   fauna

species [3]. However, the last few years were seen the various serious threats on surrounding areas, that disturb the existence of the species, such as habitat fragmentation, forest clearing, tree felling, introduced species, hunting and flora and fauna trade. Protection efforts, preservation, and sustainable use on Mount Ungaran looks not optimal. Relevant stakeholders seem to be working independently and there is no clear strategies and direction in species conservation efforts, and resulting in a weak protection and conservation. Therefore, in view of the important role of each species in Mount Ungaran in maintaining the stability of the ecosystem, especially the forest area and its environment. A long term of research activities should be conducted including the strategy and action plan of species conservation. which is expected to ensure the sustainability of species and their ecosystems in the process of sustainable development. The flora and fauna in Mount Ungaran including biodiversity that is directly and indirectly as a provider of food, clothing, genetic resources, energy, water and life support systems for the sustainability of the lives of present and future generations. In addition, it also provides educational benefits and development of science and technology. Conservation of biodiversity in Mount Ungaran especially forest areas is not only the responsibility of the government, but the role and involvement of universities and communities is also very important. Given its irreplaceable nature and its position as well a vital role for human life, the efforts to conserve the species of Mount Ungaran is an absolute undertaking and the obligation of all parties.

Based on the above, by looking at the threat factor in Mount Ungaran and Semarang State University (UNNES) location which is quite close to Mount Ungaran, it is necessary to research the strategy and action plan of conservation especially a priority species as in situ conservation model. Also as one of conservation effort of biodiversity. For conservation science to effectively inform management, research must focus on the creating scientific knowledge required to solve the problem of biodiversity conservation[4]. Priority species are defined as

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species considered essential for conservation when compared with other species. This is related to the vision of UNNES as Conservation University, then UNNES must also take a role in conservation efforts in Mount Ungaran through educational activities, research, and community service. The objective of the study was to develop assessment for priority of wildlife species in Mount Ungaran to support biodiversity conservation. This study is also based on "Policy and Guideline of National Species Conservation Strategy 2008-2018"[5].

II. METHOD

The Research Location in Mount Ungaran, Central Java, Ind-onesia with ordinate S 70 12 'E 110⁰ 20'. The Research Station spread in seven (7) station such as Gunung Gentong, Gadjah Mungkur, Banyuwindu, Kalisidi, Watuondo, Gogik, and Ngesrepbalong, The early research was conducted on January-April 2018. The research method was used eksploration by point count, line transect, and transec method [6][7]. Secondary data through previous research results and interviews with the community (35 respondent). The instrument assessment of priority wildlife species was developing from the priority species regulation of Indonesian Minister Forestry No P. 57/ Menhut-II/ 2008 and jointed with the IUCN and CITES Red list [8]. There are six category (endemic species, IUCN, CITES, habitat, threatened, and management status) and 22 factors to determine the priority species. Scores for each factor range from 5, 10, 15, 20, and 25. The criteria category level score are : very high (97-120); high (73-96); low (49-72), and very low (25-48). The data analysis input was descriptive qualitative and will be done by FGD (Focus Group Discussion) research team, expert, and stakeholders to get input from them.

III. RESULT AND DISCUSSION

Priority species are defined as species considered essential for conservation when compared with other species. Developing assesment and determination for priority wildlife species in Mount Ungaran is carried out through three stages. In the first step, analyzes of researcher's exploration results in the field study. The results recorded all of fauna species on Mount Ungaran and also from interviews of the respondent (surrounding communities in Mount Ungaran). We recorded from taxon category such as local name, English name, scientific name, family, order, class, distribution and conservation status of the species.

The second step is a review of the entire species list, the list of protected species in Indonesia, the IUCN red list data, and CITES. To determine criteria that need to be addressed in the determination of priority species, trials of priority species selection by researchers based on the experience and knowledge of each discussion participant. The researchers determined the scoring scores of each species. The results of early analysis the list of taxon categories and scoring showed there were at least 10 taxon groups in Mount Ungaran that could be nominated into priority species, there are Lepidoptera,

Odonata, Hymenoptera, Crustacea, Gastropoda, Pisces, Amphibia, Reptile, Aves, and Mammalia.

Based on the selected taxon then the experts discussed determining the appropriate criteria underlying the selection of the species into the data list, so that ultimately presented the main criteria for the selection of priority species. he next step is to re-check selected species using a more complete literature. After re-examination, there is a change in the order of priority because there are some that do not meet one or more defined criteria. Furthermore, with consideration of the researcher and experience as well as the latest information available, a list of temporary priorities has been prepared.

Determination of the scoring is based on generic criteria that have been set. Generic criteria are generally applied criteria to all fauna taxa groups (developing from developing from the priority species regulation of Indonesian), as follows :

1. Endemisity: distribution coverage, namely: local, regional, national and non-endemic
2. Conservation status : based on IUCN Red List data, CITES, and Indonesia regulation
3. Habitat condition :suitable habitat, disturbing habitat, fragmentation habitat
4. Threatened : Indicators of threats species ie: species suffered for hunting/pets, species suffered serious for trafficking, species suffered serious disruption due to catching/gathering for cultural purposes, species seriously impaired due to agricultural/ plantations that are not environmentally friendly, fire, land conversion, and species are not seriously disturbed in nature
5. Conservation status : based on Indonesian regulation, IUCN, and CITES
6. Status of species management, management indicators are the presence or absence of species management or management plans

Thus obtained the provisional list data taxon will be scoring again for each species. The result of re-scoring from 10 to 6 taxa were Lepidoptera, Odonata, Amphibia, Reptile, Aves, and Mammalia. The highest number of species can be found on Lepidoptera taxa, but the highes number of conservation status species can be found in Aves taxa (57 species). (Table 1).

Table 1 The number of species taxa that nomited to be priority species in mount Ungaran

No	Taxon	Number of species	Number of conservation status
1	Lepidoptera	62	2
2	Odonata	45	1
3	Amphibia	20	2
4	Reptilia	36	2
5	Aves	101	57
6	Mammalia	17	3

After obtaining the nomination of the taxa priority category in the early stages, then scoring for each of the taxa species

based on generic criteria set for the next analysis.

Results of interviews with community around the Mount Ungaran associated with the conservation model that had been developed there and barriers in the implementation of conservation carried out so far and development. The questions relating to community knowledge related to existing conservation models are around knowledge of wildlife conservation programs, activities and activities. The first aspect excavated from informants relates to the knowledge of wildlife protection programs. From this aspect, it turns out that most informants as much as 80% respondent said that 56% said they did not know the conservation program in Mount Ungaran, 84% did not know the protected or conservation status wildlife species, and most agreed and would be involved if there was a conservation program (75%). The involvement and efforts of the government to conduct conservation in Mount Ungaran are still considered low (56%).

Handling of species conservation can not be done by only one institution. The existence of agencies related to conservation issues can not be ignored, for example the existence of institutions outside conservation institutions (quarantine, customs, livestock) whose activities have some connection with conservation issues of the species. In addition there are conservation issues that can not be handled by one institution only, so that needed handling together. These diverse institutions often lead to species conservation efforts in Indonesia to be complicated, primarily because of the confusion between authority and responsibility of each institution. It is necessary for cooperation and coordination between institutions that are systematic, planned and long term. Support from various parties is believed to increase the success of conservation type management efforts. Local wisdom which is a apart of human resources is still one of the most important factor in maintaining natural forest recources[9] [10] [11].

IV. CONCLUTION

An effort to improve the efforts of species conservation in Mount Ungaran it is needed strategic and action plan of priority species conservation. Mount Ungaran has a richness species that eligible for designated as priority species based on generic criteria.

V. KNOWLEDGMENT

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