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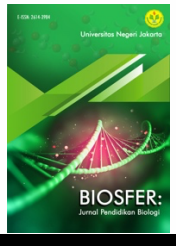

Profile of students conservation attitudes in forest management and plant diversity management based on local wisdom

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ABSTRACT

The diversity of plant species found in the Temedak customary forest is relatively high but residents should not use it freely. Residents are prohibited from cutting or taking wood from the forest, they can only take fruit, rattan and bamboo for their own consumption and must have the permission of local traditional leaders. The higher the diversity of plants found in the Temedak customary forest, the higher the threat from outside. This is evidenced by the theft of wood, bamboo and other plants in the Temedak customary forest carried out by irresponsible people. For this reason, conservation attitude profile data is needed to identify categories of each indicator of students' conservation attitudes in protecting and overcoming surrounding biodiversity problems. This research uses quantitative descriptive method. Research participants included housewives, village shamans, local or community leaders. The instruments used are in the form of field notes of interview guidelines and conservation attitude questionnaires. The questionnaire was in the form of 38 statements tested to XI MIPA SMA students consisting of 40 respondents. Based on the results of the study, it was found that the Temedak customary forest has endemic plant species, namely pacat wood (*Harpullia arborea*) and carrion flowers namely *Amorphophallus gigas*. There are 57 types of plants that generally used by the people of Keluru Village such as foodstuffs, buildings, medicins, wicker, local technology and art, as well as for the benefit or complement of traditional ceremonies. The results of obtaining student conservation attitudes from 40 respondents showed differences in each indicator.

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INTRODUCTION

Indonesia is blessed with one of the most extensive and most biodiverse tropical forests in the not too long period of time there has been significant forest destruction throughout Indonesia (Forest Watch Indonesia, 2017). Based on data from the World Resources Institute (WRI) Indonesia is included in the category of 10 countries with the highest rate of tropical rainforest loss in 2018. In that year Indonesia lost 339,888 ha of primary tropical rainforest. The figure is third only to Brazil and Congo. Forest fires and agricultural land conversion are the main drivers of deforestation in Indonesia (Ministry of Environment and Forestry, 2019). One of the environmental problems related to the destruction of Indonesia's forest natural resources can be found in Jambi Province

Various studies have shown that the involvement of local communities in forest management has positive implications for forest sustainability. Santika et al. (2017), also argue that community-managed forest management is a solution to reduce deforestation while improving community welfare, especially in developing countries such as Indonesia. Sustainable use is one of the efforts made by local communities in Indonesia that can save conservation efforts (Silalahi, 2015). Ma'arif et al. (2012), previously stated that each community group has its own knowledge and way of regulating the environment for their survival, or what is known as local wisdom. One form of environmentally friendly forest management has been carried out by the people of Keluru Village, Jambi province by applying local wisdom in forest management and plant diversity management in the Temedak customary forest. Temedak customary forest is located in Jambi province. This forest is precisely located in Keluru Village, Kerinci Regency. Based on preliminary observations, Temedak customary forest is a forest thathas an area of 23 ha and is the first time in the Jambi province area that has a decree from the regent ofKerinci Regency and was confirmed by the Jambi provincial government, as well as being a pilot forother districts that want to create customary forests. Temedak customary forest is surrounded by lush rice fields and mixed gardens that support people's lives. This forest is 500 meters from residential areas and has a fairly high diversity of plant species. The most interesting thing that is in the Temedak customary forest is that pacat wood (Harpullia arborea) can be found. In addition, a variety of wild orchids and carrion flowers of Amorphophallus gigas are also found that thrive in the Temedak customary forest area.

The large diversity of plant species found in the Temedak customary forest does not mean that the people of Keluru village can use it freely. Residents are prohibited from cutting or taking wood from the forest, they can only take fruit, rattan and bamboo for their own consumption and even then they must have the permission and knowledge of local traditional leaders. As stated by Ferry et al. (2017), the Temedak customary forest is managed by the Keluru village community by applying local wisdom that aims to avoid damage to the forest, and so that the forest can be passed on to the next generation. However, the higher the diversity of plants found in the Temedak customary forest, the higher the threat from outside. This is evidenced by the rampant theft of wood, bamboo and other plants in the Temedak customary forest carried out by irresponsible people. This is supported by the results of research by Ferry et al. (2017), that there used to be theft of wood roots carried out by residents of the village next door which ended with customary law. In fact, forests are the last defense to protect flora and fauna, in addition to their function to prevent floods, droughts and reduce greenhouse gas emissions that cause global warming.

One of the problems that occurs in the Temedak customary forest is caused by the lack of awareness in a person about their environment. As stated by Thapa (1999) that by creating environmental awareness among the community especially students is the best way because they are future leaders, planners, policymakers and environmental educators. Dasrita et al. (2015) also revealed that environmental awareness is formed from the knowledge and experience of students interacting with the surrounding environment. In addition, the absence of conservation education learning applied in schools is one of the causes of the lack of conservation attitudes that students have towards the biodiversity around their residences. Saroyo et al. (2019), also added that conservation education carried out at an early age plays an important role in shaping the character of society in the future. Leksono et al. (2007), previously explained that low awareness in protecting the environment is caused by an inappropriate learning system. The learning process of biodiversity conservation at this time still focuses on cognitive abilities only and has not developed many affective aspects of students. Another problem, the development of science and technology has also resulted in the formation of various negative activities such as exploration of mining sources, free use of forests, hunting of protected

animals and so on. Therefore, it is necessary to have a solid student conservation attitude in following the flow of scientific and technological developments but still caring about environmental sustainability. As stated by Ichsan et al. (2019), environmental care behavior is important for every individual to have because it will keep the environment in good condition so that it can be passed on to the next generation. In addition, people's understanding of biodiversity conservation is still weak, so their concern for conservation is also low (Fischer and Young, 2007). Research on the profile of students' conservation attitudes in forest management and plant diversity management based on local wisdom in the Temedak customary forest of Jambi province is important to be carried out in order to identify the conservation attitudes that students have in protecting and overcoming biodiversity problems around them.

METHODS

Research Design

This study used quantitative descriptive methods and data collection techniques in the form of interview guides and conservation attitude questionnaires. The subjects in the study included housewives, village shamans, local traditional leaders, and 40 respondents from class XI MIPA students. The object of the research is a description of local wisdom data and student conservation attitude profile data. The location of this study is in the Temedak customary forest area in Keluru Village, Keliling Danau District, Kerinci Regency.

Population and Samples

The research population in the preliminary study is the local wisdom possessed by the people of Keluru Village, especially those related to forest management and plant diversity management in the Temedak customary forest. The sampling technique used in this study was the snowball sampling technique, where the researcher asked participants to recommend others to become members of the sample. For key participants as guardian, the key participants include housewives, village shamans, local traditional leaders or communities who have knowledge about forest management and plant diversity management in the Temedak customary forest, and the use of plants that are generally used by the people of Keluru Village.

In addition, data were also taken on the profile of student conservation attitudes in forest management and plant diversity based on local wisdom in the Temedak customary forest obtained from student responses at one of the Kerinci State High Schools whose school location is close to the Temedak customary forest. School selection is carried out by the purposive sampling method, where the school is selected based on consideration, namely the location of the school, which is close to the Temedak customary forest or proximity to the data taken.

Instrument

1. **Field note**
   Researchers use field notes to record all conversations with data sources or informants. This field record was used during the researcher's observation in the Keluru Village area.
2. **Interview guidelines**
   The interview guidelines contain a compiled and flexible list of questions and informant resources tailored to the situation and conditions in the field. Researchers become developers of instruments based on empirical symptoms that appear in the field. Interview guidelines are used by researchers as a reference for the terms of questions that will be asked by researchers to informants.
3. **Conservation Attitude Questionnaire**
   This questionnaire contains positive and negative statements related to wisdom in forest management and plant diversity in the Temedak customary forest consisting of five indicators (Trombulak et al., 2004) namely: the objectives and principles of conservation biology, values, concepts, threats and protective measures about biodiversity, ecological integrity and ecological health interests.

Procedure

Researchers use field note guides to make observations. In addition, using interview guidelines to obtain information from traditional leaders and the community of Keluru Village The main instrument used in this study was a questionnaire with five indicators spread across 38 positive and negative

statements aimed at identifying students' conservation attitudes. In this study, 40 respondents from classes XI MIPA A and B were in one of the public high schools in Kerinci.

Data Analysis Techniques

The data that has been obtained is then processed to obtain data, answers and conclusions from the research. This data processing can be done in the following ways:

1. Determination of the weight of the conservation attitude scale score
   Scoring is done on each statement. Statements consist of positive and negative ones. Positive statements are scored 4 for the Strongly Agree (SS) option, a score of 3 for Agree (S), a score of 2 fordisagree (TS), and a score of 1 for Strongly Disagree (STS). As for the negative statements, it gives a score of 1 for the Strongly Agree (SS) option, a score of 2 for Agree (S), a score of 3 for Disagree (TS),and a score of 4 for Strongly Disagree (STS).
2. Make a recapitulation of data from positive and negative statements based on the attitude assessment rubric and calculate the percentage of attitudes of each student using the formula according to Purwanto (2012) as follows:

$$NP = \frac{R}{SM} \times 100\%$$

Where :
NP = expected percentage value
R = raw score earned by the student
SM = ideal maximum score of the test in question
100 = fixed number

The categories of conservation attitudes of students adapted and converted based on the Permendikbud (2014) are listed in Table 1 below.

Table 1.
Student Conservation Attitude Assessment Criteria

Score (%)	Category
88 - 100	Excellent
72 - 87	Good
46 - 71	Enough

RESULTS AND DISCUSSION

Local Wisdom in Temedak Customary Forest Management

Based on the results of interviews with traditional leaders of Keluru Village, the people of Keluru Village have rules (local wisdom) in managing and maintaining the Temedak customary forest which has been passed down for generations. Local wisdom in the form of these prohibitions is used as a community controller in utilizing the Temedak customary forest. In managing the Temedak customary forest, the traditional leaders of Keluru Village impose several rules (local wisdom), including:

1. It is forbidden to dispose of waste that cannot be destroyed by natural processes, such as plastic waste, rubber, types of metals, and glass in the Temedak customary forest.
2. It is forbidden to bring pets and livestock into the Temedak customary forest.
3. It is forbidden to open land or farm in the Temedak customary forest.
4. It is prohibited to carry out burning activities within the Temedak customary forest.
5. It is forbidden to enter the Temedak customary forest masse and in groups (more than 25 people), except for local communities in forest protection activities and with the permission of traditional leaders, mamak grandmothers, and village heads.
6. It is forbidden to build village social facilities (asphalt roads, schools, mosques, etc.) or residential buildings permanently within the Temedak customary forest.
7. It is forbidden to kill species of animals that play an important role in pollination of plants, predators of pests of cultivated plant diseases, soil fertilisers, especially animals that are classified as

endangered or protected animals, unless these species threaten and harm the lives of many people by handling them by the competent authorities.

8. Temedak customary forest is only used as a place to find long wood, short wood, ijuk, cigarettes, firewood, bamboo, pecan or kemintan, jengkol, rattan or other forest products, as well as a place for buffalo paddocks.

Local Wisdom in The Management of Plant Diversity in Temedak Customary Forest

Based on the results of interviews with traditional leaders of Keluru Village, the management of plant diversity carried out by the people of Keluru Village has occurred from generation to generation. Related to the management of plant diversity in the Temedak customary forest, the traditional leaders of Keluru Village make rules (local wisdom) as the controller of the Keluru Village community in managing plant diversity in the Temedak customary forest, including:

1. Logging in the Temedak customary forest is only permitted for the benefit of Keluru Village (for example to build mosques, prayer rooms, etc.), but even then it must be according to customary rules and joint decisions or cannot be cut down carelessly, not allowed to be traded either on a large scale or on a small scale, and theft of timber or illegal logging is a strictly prohibited act.
2. Do not cut down trees located near water sources, ravines and creeks.
3. The use of vegetation in the Temedak customary forest should only be used for the benefit of the village community in small quantities, for example for traditional medicines, the needs of the *kanuhi adot sudeah nuai* ceremony (kenduri adat has been harvested) or rituals and cooking ingredients, but still must be with the permission and knowledge of local traditional leaders.
4. Not destroying plant species that are categorized as key food sources for animal food, unique plant types, and sources of raw materials for traditional medicines.

The local wisdom possessed by the people of Keluru Village, especially those related to the management of the Temedak customary forest and the management of plant diversity in the Temedak customary forest, has proven to be able to create an ecosystem balance in it as well as have an impact on the forest, which continues to provide extraordinary benefits for the local community. This is also evidenced by the receipt of various awards by the traditional institutions of Keluru Village. That is, human activity and behavior have a huge influence on the existence of his natural environment. On the other hand, when humans act arbitrarily towards the natural environment, that causes damage, then humans also have an effect as a reaction to nature due to human actions. Ancestral tigers also supervise the social behavior of the people of Keluru Village, people who violate the rules in behaving (misbehaving) can be punished by ancestral tigers. This was also explained by Ferry et al. (2017) that the local wisdom of the Keluru Village community has existed since the past and is still respected and obeyed by the people of Keluru Village. The people of Keluru Village believe in the existence of "ancestral tigers and "ihyang goats". They believe that if there is a violation of the rules, then the ihyang goat, which is the former pet of the ancestors, still exists and will appear. Likewise with the existence of ancestral tigers who are believed to guard the Temedak customary forest.

Types of Endemic Plants in the Temedak Customary Forest

One of these endemic plant species can be found in the Temedak customary forest, namely pacat wood (*Harpullia arborea*) and the carrion flower species *Amorphophallus gigas*. The following is an explanation of pacat wood (*Harpullia arborea*) and the carrion flower *Amorphophallus gigas*, namely:

a. Pacat wood (*Harpullia arborea*)

One of the uniqueness of the Temedak customary forest is the discovery of endemic plant species. One of the endemic plant species that can be found in the Temedak customary forest is the pacat wood plant. Pacat wood has the Latin name " *Harpullia arborea* " also known by researchers from the Bogor botanical garden as the pearl of the Temedak customary forest. Based on the results of preliminary observations, pacat wood is often used by the people of Keluru Village as raw material for making household furniture such as cabinets, tables and chairs. According to Basuni & Haidir (1997), the uniqueness of this pacat wood is due to its distinctive decorative properties, colored in a combination of white and blackish brown. It is said that this property comes from the substance released by the pacat log which is wound and over time will change the color of the wood surface to blackish brown. Therefore, not all pacat wood has this kind of distinctive pattern, except for those that have suffered stem wounds.

Based on the results of researchers' observations, in the Temedak customary forest where pacat wood grows, it is found in areas with steep marbles and high cliffs. Kostermans (1982) suggests that the place where pacat wood grows is in the middle or lower mountains of arid areas and is sometimes found also in lowland tropical rainforest areas. Pacat wood is classified into the Sapindaceae family and is one of the typical Kerinci plants. In addition, pacat wood can also be found in Kerinci Seblat National Park (TNKS). Pacat wood is declared rare or found limited in Kerinci Seblat National Park

(TNKS) but does not include flora protected under PP. No. 7 of 1999.

Based on preliminary observations, the high selling value and growing demand for pacat wood make pacat wood scarce, including in the Temedak customary forest. The use of pacat wood by the people of Keluru Village used to be banless, but now it is a little difficult to find large pacat wood in the Temedak customary forest, so the traditional leaders of Keluru Village made a ban on cutting pacat wood until the pacat wood could develop again. The ban is obeyed by all the people of Keluru Village and as a manifestation of the conservation of endemic plants in the Temedak customary forest.

b. Carrion Flower (Amorphophallus)

Another endemic plant species that can be found in the Temedak customary forest is the carrion flower, or which has the Latin name "Amorphophallus" and belongs to the family Araceae (taro-talasan). Hetterscheid & Ittenbach (1996) revealed that there are 25 types of Amorphophallus in Indonesia, 18 of which are endemic: 8 types in Sumatra, 3 types in Kalimantan, 5 types in Java, and 1 type in Sulawesi. Amorphophallus undergoes two phases in its life that take place alternately and continuously, consisting of the vegetative phase and the generative phase. When the carrion flower undergoes a generative phase (blooming of flowers), this highest compound flower will emit a pungent odor like the smell of carrion. This stench serves as a lure for flies and beetles, which the insects will contribute to the pollination process (Munawaroh, 2014).

Some of the Amorphophallus species are rare Indonesian plants whose taxon populations tend to decline, both in the number of individuals and from their genetic diversity. Based on the results of preliminary document analysis and researchers' observations, one type of carrion flower that can be found in the Temedak customary forest area is *Amorphophallus gigas*. According to Rambey et al., (2022) the carrion flower of the type *Amorphophallus gigas* is one of the Amorphophallus species endemic to Sumatra which is protected by law in Indonesia. In addition, *Amorphophallus gigas* is one of the giant and tallest Amorphophallus in the world.

Its population in the wild is decreasing due to various factors mainly due to habitat degradation (Rambey et al., 2022). Generally, *Amorphophallus gigas* is found in secondary forests on steep, hilly slopes with fairly good soil aeration. However, this type of *Amorphophallus gigas* sometimes also grows in the fields of the population, so with the ignorance of the local people towards this type they often exterminate this plant because it is considered a nuisance (Yuzammi, 2009). Based on the results of preliminary observations, "*bungo bangkeai*" as the Keluru Village community calls *Amorphophallus gigas* in the Temedak customary forest its existence has never been disturbed by the local community, so that *Amorphophallus gigas* can live and thrive in the Temedak customary forest area. In addition, every time one of the residents passes through the Temedak customary forest, it never disturbs or exterminates *Amorphophallus gigas*, although not many local people know about the exoticism of carrion flowers of this type. This is what makes its existence quite a lot in the Temedak customary forest area.

Based on the results of researchers' observations, in the Temedak customary forest, carrion flowers of this type have varying sizes, some can reach 1 - 3.5 meters in height, both in the form of vegetative and generative phases. This is also supported by the explanation of Yuzammi (2009) that the *Amorphophallus gigas* plant in the generative phase can reach a height of 3.35 meters, while in the vegetative phase the average can reach a height of 0.81-3.44 meters. However, it is a little difficult to find *Amorphophallus gigas* at the time of flower blooming (generative phase) in the Temedak customary forest.

Plants Commonly Used by the People of Keluru Village

More than 6000 types of flowering plants, both wild and cultivated, are recognized and used for food, clothing, protection and medicinal purposes. Indonesians consume no less than 100 types of herbs and seeds as a source of carbohydrates, as well as no less than 100 types of nuts, 450 types of fruits and 250 types of vegetables and mushrooms (KMNLH, 2007). According to Rahayu and Rugayah (2007), the level of knowledge about the management and utilization of plant species diversity in each tribe or community group will be different from one another. This is due to differences in culture, customs and environmental conditions in which they live.

Setiawan & Qiptiyah (2014) also explained that the tradition of knowledge of local people in rural areas about the use of plants to meet daily needs has been going on for a long time. This knowledge starts from the trial of various types of plants to meet daily needs. The tradition of using this plant has been partially proven scientifically correct, especially for medicinal plants. One of the local communities that still uses plants to meet their daily needs is the people of Keluru Village. To meet their daily needs, the people of Keluru Village still use no less than 57 types of plants as food, buildings, medicines, wicker, local technology and art, as well as for the benefit or complement of traditional ceremonies. Most of these useful plants grow wild in the Temedak customary forest. The following are the types of plants in the Temedak customary forest that are generally used by the people of Keluru Village and have been inventoried by the Keluru Village customary density institution, including the following.

a. Utilization of Plants for Food

Food plants are everything that grows, lives, stems, roots, leaves, and can be consumed by humans. The foodstuffs in question are staple foods, additives, drinks, seasonings, and spices. Based on the results of interviews with housewives and traditional leaders of Keluru Village, the people of Keluru Village depend on their food needs from agricultural products in the fields and in the fields and the results of concocting wild plant species found around them, such as in the Temedak customary forest. The use of plants in the Temedak customary forest as a food source can be divided into three parts, namely food sources in place of staple foods (carbohydrates), food sources in the form of vegetables and food sources in the form of fruits. Overall, there are 10 types of plants that are used as food sources by the people of Keluru Village, which can be seen in Table 2.

Table 2.
Plants Used as Food Sources by the People of Keluru Village

No	Local Name	Latin name	Parts Used
1	Ambacang	*Mangifera foetida*	Fruit parts
2	Asam kandis	*Garcinia parvifolia*	Fruit parts
3	Bambu betung	*Dendrocalamus asper*	Young parts of the stem (shoots)
4	Bungo tekellu	*Nicolaia speciose*	Flower section
5	Durian	*Durio zibethinus*	Fruit parts
6	Enau	*Arenga pinata* L.	Fruit parts and bunches
7	Jengkol	*Archidendron pauciflorum* Benth	Fruit parts
8	Kemiri/kemintan	*Aleurites molucana*	Fruit parts
9	Nangka	*Artocarpus heterophyllus*	Fruit parts
10	Durian	*Toona sureni*	Fruit parts

b. Utilization of Plants for Medicines

Medicinal plants are all types of plants that are known and believed to have medicinal properties (Abdiyani, 2008). Based on data from the World Health Organization (WHO), about 80% of the world's population relies on plant-derived medicines for primary health care (Mukherjee & Wahil, 2006). Medicines of plant origin do not contain side effects, this can occur because natural ingredients in traditional medicines do not leave residues in the human body, while synthesis materials in medical drugs will leave residues in the human body (CIFOR, 2007). The superiority of herbal medicinal products causes demand in the global market to be higher and the dependence on medicinal plants taken from nature has caused a decrease in the number of medicinal plants in their natural habitat. Global market demand for herbal medicinal plants is estimated to be worth US$800 billion per year (Kumar et al., 2011).

Based on the results of interviews with village shamans and traditional leaders of Keluru Village, the people of Keluru Village who live around the Temedak customary forest have a traditional medicinal culture, including the use of medicinal plants since the past and have been preserved for generations. In general, the types of plants used by the people of Keluru Village for medicine are wild plants that grow in the Temedak customary forest area. There are 23 types of plants used as traditional medicines, as shown in Table 3 below.

Table 3.
Plants Used as Traditional Medicines by the People of Keluru Village

No	Local Name	Latin name	Parts Used	Specific Uses	Manner Use
1	Akar penang	*Coscinium fenestratum*	Leaf tops	Heat-deep medicine and asthma inhumans	The leaves are kneaded, then strained. Then the water is drunk and applied to the chest andarmpits
2	Balakangin	*Mallotus paniculatus*	Leaf section	Ophthalmic remedies inhumans	The leaves are kneaded, then filtered and the water is drippedinto the eyes

No	Local Name	Latin name	Parts Used	Specific Uses	Manner Use
3	Bambu betung	*Dendrocalamus a sper*	Young parts of the stem (shoots)	Medicinal shootsof rice plants	The bamboo shoots are pierced into the wood, and then plugged into the rice field. This method is done when the rice begins to bear fruit
4	Bambu Mayan	*Gigantochloa robusta* Kurz,	The young part of the stem (shoots) andthe root part	Cold-relieving drugs in chickens and heat-deep remedies in humans	Cold medicine in chickens: the shoots are sliced, then mixed with surian leaves and then enough water is added and then put in a container. Next it is allowedto stand for 3 nights, then spread out around the perimeter of the chicken coop. Deep heat remedy in humans: the root part is boiled and then the boiled water is drunk.
5	Bungo tekellu	*Nicolaia speciosa*,	Flower section	The drug ambeyen in human	The flowers are boiled and then the boiled water is drunk
6	Cemantung	*Ficus padana*	Root part	Cure for heatiness and cough in humans	The root part is cut in the afternoon, then accommodated with a bottle and the next morning the bottle is takenback. Then the water is drunk
7	Daun Kumbo	*Piper umbellatum* Jaeq	Stem section	Hair lengthening drugs	The stem is smoothed and mixed with water, then applied to the hair.
8	Enau	*Arenga pinata*	Bunch parts (palm sugar)	Heat-deep medicine in humans	The palm sugar is boiled and then the boiled water is drunk
9	Jelatang tanggo	*Leea indica*	Bunch parts (palm sugar)	Heat-deep medicine in humans	The palm sugar is boiled and then the boiled water is drunk
10	Kayu Aro	*Ficus sumatrana*	Sap part	Medicine for hives in humans	The sap is applied to the itchy area
11	Kayu Ketelap	*Endospermum* sp.	Sap part	Medicine for hives in humans	The sap is applied to the itchy area
12	Kayu sebuk	*Ficus hispida* Linn. F	Root part	Cure for heatiness and cough in humans	The root part is cut in the afternoon, then accommodated with a bottle and the next morning the bottle is taken back. Then the water is drunk

No	Local Name	Latin name	Parts Used	Specific Uses	Manner Use
13	Kayu tulang	*Glochidion philippiense* Benth	Leaf section	Body pain medication in humans	The leaves are boiled, then the boiled water is used for bathing
14	Kemenyan	*Styrax benzoin* Dryand	Sap part	Measles drug in humans	The sap is scraped off and put ina young coconut, then the water is drunk
15	Linju	*Chromolaena odorata*	Leaf section	Wound and malaria medicine in humans	Wound remedy in humans: the leaves are smoothed and then attached to the wounded part Malaria medicine in humans: the leaves are kneaded and then the water used to squeeze is drunk
16	Lulang	*Breynia macrophylla.*	Leaf section	Medicine for hives in humans	The leaves are smoothed and then applied to the itchy areas
17	Menzi	*Syzygium laxiflorum* DC.	Leaf tops	Heat-deep medicine in humans	The leaves are kneaded, then filtered, then the water is drunkand applied a little to the chest.
18	Pinang	*Areca catetcu* L.	Fruit parts	Stomach pain remedy in humans	The fruit is mashed and then the water is drunk
19	Pulai pipang	*Alstonia anguistiloba*	Bark part of the trunk	Malaria drugs in humans	The peel is boiled and mixed with mangosteen peel. Furthermore, the boiled water that has been mixed with mangosteen peel is drunk
20	Puding merah (wiru)	*Graptophyllum pictum* (L.) Griff	Leaf section	The drug ambeyen in humans	The leaves are boiled or kneaded, then added with a little sugar and then the water is drunk
21	Rukam	*Flacourtia rukam* Zoll. & Moritzi	Leaf section	Mandel drug in humans	The leaves are boiled and then the boiled water is drunk
22	Seduduk	*Melastoma malabathricum* L	Leaf section	Drugs for toothache, gills in humans	The leaves are boiled, then the boiled water is gargled
23	Sirih	*Piper betle* L.	Leaf section	Remedy for toothache and itching in humans	Remedy for toothache in humans: the leaves are mixedwith a small amount of sugar and further recited spells Medicine for hives in humans:the leaves are boiled, then the boiled water is used for bathing

The people of Keluru Village more often use and process medicinal plants by boiling. According to Simbala (2016), this is because this method is the easiest to do when compared to direct processing, because both methods must go through several stages in processing.

c. Utilization of Plants for Building Materials

Based on the observations of researchers, the people of Keluru Village know well the various types of plants that are used as building materials. The original house building of the people of Keluru Village

building materials is generally adjusted to its function, for example for poles, roofs, reeds, floors, walls and retainers of house poles. The original house building of the people of Keluru Village in the form of a wooden stilt house, woven walls and boards can be presented in Figure 1.

Figure 1. House Building of One of the Residents of Keluru Village(Source: Researcher Documentation, 2019)

Based on the results of interviews with traditional leaders of Keluru Village, in the past, the people of Keluru Village in building houses took wood from within the Temedak customary forest, but now tree felling is only allowed for the benefit of the village, for example in building prayer rooms, mosques and bridges. In general, they recognize 19 types of trees in the Temedak customary forest that are used as building materials, as shown in Table 4.

Table 4.
Plants Used as Building Materials by the People of Keluru Village

No	Local name	Latin name	Parts Used	Specific Uses
1	Balak angin	*Mallotus paniculatus*	Stem section	For house poles
2	Bambu betung	*Dendrocalamus asper*	Stem section	For walls and floors
3	Bambu mayan	*Gigantochloa robusta*Kurz,	Stem section	For walls and floors
4	Bambu serik	*Gigantochloa serik*	Stem section	For roofs and walls
5	Bintung	*Bischofia javanica* Blume	Stem section	For house poles
6	Kayu ketelap	*Endospermum* sp.	Stem section	For house poles
7	Kayu klat	*Spatholobus palawanensis* Merrill	Stem section	For house poles
8	Letung beras	*Aglaia* sp.	Stem section	For house poles and house reeds
9	Letung nggang	*Aglaia argentea*	Stem section	For house poles and house reeds
10	Medang emas	*Cinnamomum cuspidatum*	Stem section	For house poles
11	Medang jambu	*Memecylon costatum* Roxb	Stem section	For house poles and boards
12	Medang penjait	*Santiria tomentosa*	Stem section	For house poles, boards and walls
13	Medang telampung	*Virola surinamensis*	Stem section	For house poles and walls
14	Melaku	*Macaranga gigantea*	Stem section	For house poles
16	Menzi	*Syzygium laxiflorum* DC	Stem section	For retaining house poles
17	Pulai pipang	*Alstonia anguistiloba*	Stem section	For floorboards
18	Surian	*Toona sureni*	Stem section	For house poles
19	Surian bawang	*Toona sinensis*	Stem section	For walls and boards of the house

d. Utilization of Plants for Local Technology and Art Materials

Based on the observations of researchers, the people of Keluru Village also use plants in the Temedak customary forest as material for local technology and art. Based on the results of interviews with traditional leaders of Keluru Village, the use of plant species in the Temedak customary forest is also widely used to make farming equipment, such as machete wrappers. In addition, certain types are also used as raw materials for making wicker and household furniture. The types of plants include:

1) Equipment to go to the fields and to the fields, for example machete wrapping is made using surian wood (*Toona sureni*) and lulang (*Breynia macrophyll*), and tutop wood (*Macaranga conifera*), to make buffalo antan (buffalo carts) using fig wood (*Ficus sumatrana*), for garden barriers of fellow residents made using barley (*Cordyline fruticosa*).
2) Equipment for catching fish, such as fishing rods made using chinese bamboo (Bambusa multiplex) and bamboo aur oil (*Bambusa vulgaris* var. vulgaris), straps and lukah are made using rattan (*Calamus* sp.)
3) Home furnishings such as chairs, cabinets, tables, wall hangings made using pacat wood (*Harpullia arborea*), medang penjait (*Santiria tomentosa*), and black bamboo (*Gigantochloa atroviolacea*) and jaluko wood (*Turpinia* sp.)
4) Traditional transportation equipment or transportation used as a means of transportation in rivers and lakes, such as dippers are made using gold medang (*Cinnamomum cuspidatum*), klat wood (*Spatholobus palawanensis* Merrill), letung nggang (*Aglaia argentea*), and letung beras (*Aglaia* sp.).
5) Traditional art utensils, such as flutes are made using tamiang bamboo (*Schizostachyum blumei* Nees).

e. Utilization of Plants for the Benefit / Complement of Traditional Ceremonies

Traditional ceremonies are actions that are bound by certain rules according to customs. Traditional ceremonies are traditions that still exist, are maintained, and passed down for generations (Rohmah et al., 2014). The level of knowledge of the community is closely related to the use of plants and plant parts used in the procession of customs. The people of Keluru Village are people who still use plants as material for traditional ceremonial processions, for example for the *kanuhi adot sudeah nuai* (traditional kenduri has been harvested).

Based on the results of the initial document analysis, the *kanuhi adot sudeah nuai* (traditional kenduri has been harvested) ceremony aims to be a gratitude to God for the harvest in the hope that the upcoming harvest will be even better. During the *kanuhi adot sudeah nuai* (traditional kenduri has been harvested) all the people of Keluru Village make lemang and exchange lemang with other villagers as a means to show respect and gratitude. Lemang is a ritual food during the *kanuhi adot sudeah nuai* (traditional kenduri has been harvested) ceremony. For this celebration, the people of Keluru Village take advantage of certain types of plants as presented in Table 5.

Table 5.
Plants Used for the Benefit / Complement of Traditional Ceremonies by the People of Keluru Village

No	Local name	Latin name	Parts Used	Specific Uses	Manner Use
1.	Bambu kapal	*Gigantochloaatter*	Stem section	For glue cooking utensils	The stem is cut to the size of a bamboo segment with a length of 30-40 cm, then on the inside the bamboo is cleaned using a cloth, after the bamboo is clean, on each side of the bamboo is given bananaleaves. After the banana leaves are neatly attached, in the bamboo putglutinous rice and watered with coconut milk then placed in a furnace specially assembled toburn.

No	Local name	Latin name	Parts Used	Specific Uses	Manner Use
2.	Kemenyan	*Styrax benzoin* Dryand	Sap part	For the condition of summoning ethereal beings	The sap is burned, then recited a spell

Analysis of Conservation Attitude Profile Results

The profile of students' conservation attitudes in this study was netted through a questionnaire with 5 indicators spread across 38 positive and negative statements and 4 answer choices. This questionnaire was distributed to 40 respondents from grades A and B. Based on Figure 2, the average difference in percentage

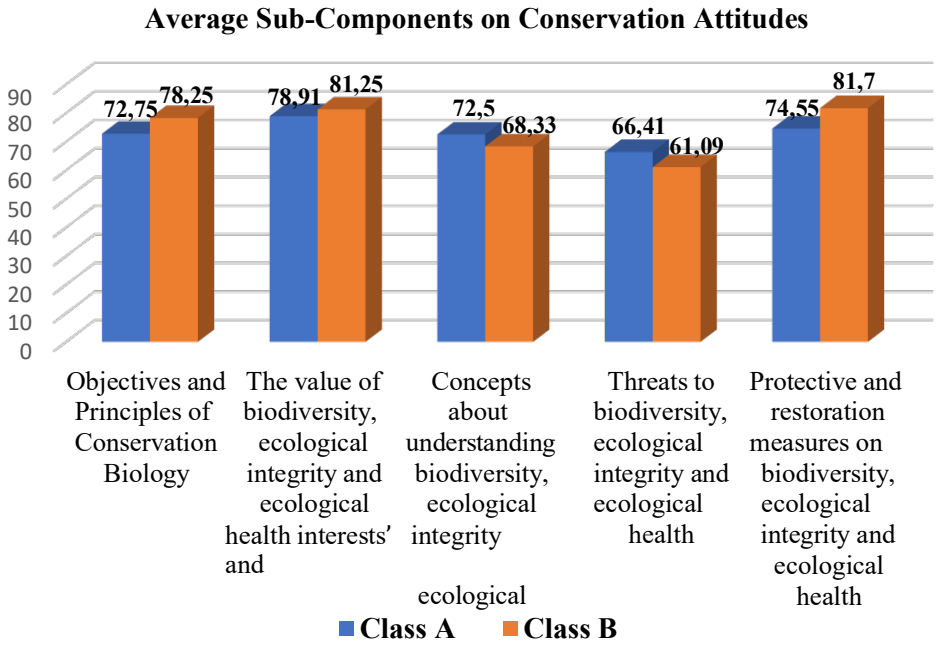

Figure 2. Percentage Averaging Chart on Conservation Attitude Indicator

Figure 2. indicates a difference in the average percentage in each conservation attitude indicator. Based on these results, class B has a higher average compared to class A. This is due to the student's answer to the statement on the questionnaire. Class A in the concept sub-component of understanding biodiversity, ecological integrity and ecological health has a score of 72.5% with a good category, while in class B it gets a value of 68.33% with sufficient categories. This is due to the existence of class B students who answer negative statements with affirmative and strongly agreeing answers.

Results obtained on other sub-components such as conservation biology objectives and principles; the value of biodiversity, ecological integrity and ecological health interests; protection and restoration measures on biodiversity, ecological integrity and ecological health in class A and class B both obtained grades with good categories. This is because class A students and class B students already have an awareness of the surrounding environment. This is supported by the explanation of Putri (2018), that attitudes will arise if students already have awareness and understanding of their environment. According to Sugandi (2013), attitudes start from knowledge, the higher the individual's knowledge of conservation, the higher the conservation attitude possessed by the individual. Leksono (2017) also added that knowledge is closely related to students' attitudes towards biodiversity conservation. The existence of a conservation attitude that a person has will help preserve, preserve and maintain the sustainability of living things in an ecosystem (Fitriyani, 2021). Added to this is Infield's (1988) explanation that the positive attitude of local communities living in protected areas is very important in initiating appropriate actions to solve conservation problems.

Meanwhile, for the sub-component of threats to biodiversity, ecological integrity and ecological health in class A and class B both obtained values with sufficient categories. This is because there is no conservation biology learning applied in schools, so students do not understand the importance of biodiversity. In line with Fischer and Young's (2007) statement, that people's understanding of

biodiversity conservation is still weak, so their concern for conservation is also low. Leksono and Rustaman (2012) also explained that the low public understanding of the importance of biodiversity is caused by inappropriate learning systems. As stated by Khanafiyah & Yulianti (2013), that the learning process aimed at changing student behavior must be directed to overcome environmental problems in everyday life.

Based on the results of preliminary observations, teachers also do not use the environment as a source and medium of learning. According to Leksono and Rustaman (2012), biodiversity conservation learning should actively involve students and use the surrounding environment as a learning resource. In line with the opinion of Iskandar (2009), that the environment is one of the most important learning resources and has very valuable values in the context of the student learning process. Leksono et al., (2013) also explained that biodiversity conservation learning should be carried out in the field to get to know directly the objects they are studying. Susilo et al., (2016) also added that student involvement in the environment can provide opportunities for students to gain hands-on experience with the environment. Experience with the environment makes them have a sense of caring. This is in accordance with the opinion of Chawla (1998) and Azwar (2003) that experience with the environment can influence a person's attitude.

Ichsan et al. (2019) explained that environmental learning will make people grow their behavior in several ways, namely: a) respect and maintain life; b) improve the quality of human life; c) preserve the earth's vitality and biodiversity; d) avoid wasting non-renewable resources; e) do not exceed the limit of the earth's carrying capacity; and f) change consumptive and excessive life attitudes.

CONCLUSION

The sympathetic of the research results is that there is local wisdom in forest management and plant diversity management in the Temedak customary forest which is applied by keluru village customary leaders as community controllers in managing forests and utilizing plant diversity found in Temedak customary forests. Temedak customary forest has endemic plant species, namely pacat wood (*Harpullia arborea*) and carrion flowers of the type *Amorphophallus gigas*. There are 57 types of plants that are generally used by the people of Keluru Village such as food (food), buildings, medicines, wicker, local technology and art, as well as for the benefit or complement of traditional ceremonies. The acquisition of student conservation attitude profiles in forest management and plant diversity management in the Temedak customary forest of Jambi province is generally in the good category or level, although not all indicators show good category gains.

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