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COMPARISON OF FISH DIVERSITY IN THE OPAK RIVER ECOSYSTEM AND THE INLET OUTLET AREA OF THE GAJAH MUNGKUR RESERVOIR

Perbandingan Keanekaragaman Jenis Ikan Pada Ekosistem Kali Opak Dan Kawasan Inlet Outlet Waduk Gajah Mungkur

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ABSTRACT

Indonesia is a country with high biodiversity. One of these biodiversity riches is fish. Fish diversity in Indonesia can be influenced by different ecosystem conditions. This study aims to determine and compare the diversity of fish species in ecosystems with different conditions. This research was conducted in Kali Opak Yogyakarta and the inlet and outlet areas of Gajah Mungkur Reservoir Wonogiri. Sampling in this study was conducted from April to May 2023. The method used for this research is a survey, fishing and conducting interviews with anglers around the location then the data is analyzed descriptively, namely describing, describing, analyzing the research data obtained, and calculating the index (richness, diversity, and evenness) of each location. The results of this study are, in Kali Opak, Shannon_H value 1.419, Evenness_e^H/S value 1.033, and Margalef value 0.9568. At the WGM Inlet, the Shannon_H value is 1.905, the Evenness_e^H/S value is 0.9596, and the Margalef value is 1.484. Then at the WGM Outlet, the Shannon_H value is 1.292, the Evenness_e^H/S value is 0.9099, and the Margalef value is 0.8656. Differences in fish species were found between Kali Opak and the inlet and outlet areas of Gajah Mungkur Reservoir. Kali Opak has 4 types of fish species, Gajah Mungkur Reservoir inlet has 7 types of species, and Gajah Mungkur Reservoir outlet has 4 types of species. Some species were only found in one study site. Although the inlet has moderate diversity, all study sites have low species richness. The level of species evenness in the three areas is almost the same, indicating an average level of evenness.

Key words: Diversity, Fish, Gajah Mungkur Reservoir, Opak River, Study

ABSTRAK

Indonesia adalah negara dengan kekayaan biodiversitas yang tinggi. Salah satu kekayaan biodiversitas tersebut adalah Ikan. Keanekaragaman ikan di Indonesia dapat dipengaruhi oleh kondisi ekosistem yang berbeda. Penelitian ini bertujuan untuk mengetahui dan

membandingkan keanekaragaman jenis ikan pada ekosistem dengan kondisi yang berbeda. Penelitian ini dilakukan di Kali Opak Yogyakarta dan daerah inlet dan outlet Waduk Gajah Mungkur Wonogiri. Pengambilan sampel pada penelitian ini dilaksanakan pada bulan April hingga Mei 2023. Metode yang digunakan untuk penelitian ini adalah cara survey, memancing dan melakukan wawancara kepada pemancing di sekitar lokasi lalu data dianalisis deskriptif berupa gambaran, penguraian, dan analisis data penelitian yang diperoleh, dan menghitung indeks (kekayaan, keanekaragaman, dan kemerataan) dari masing-masing lokasi. Hasil dari penelitian ini adalah, pada Kali Opak, nilai Shannon_H 1.419, nilai Evenness_e^H/S 1.033, dan nilai Margalef 0.9568. Pada Inlet WGM, nilai Shannon_H 1.905, nilai Evenness_e^H/S 0.9596, dan nilai Margalef 1.484. Lalu pada Outlet WGM, nilai Shannon_H adalah 1.292, nilai Evenness_e^H/S adalah 0.9099, dan nilai Margalef adalah 0.8656. Perbedaan jenis ikan ditemukan antara Kali Opak dan kawasan inlet serta outlet Waduk Gajah Mungkur. Kali Opak memiliki 4 jenis spesies ikan, inlet Waduk Gajah Mungkur memiliki 7 jenis spesies, dan outlet Waduk Gajah Mungkur memiliki 4 jenis spesies. Beberapa spesies hanya ditemukan di satu lokasi penelitian. Meskipun inlet memiliki keanekaragaman sedang, semua lokasi penelitian memiliki kekayaan spesies yang rendah. Tingkat kemerataan spesies di ketiga kawasan hampir sama, menunjukkan tingkat kemerataan yang rata.

Kata Kunci: Ikan, Kali Opak, Keanekaragaman, Waduk Gajah Mungkur, Penelitian

INTRODUCTION

Indonesia is one of the countries with the highest biodiversity wealth in the world (Wahyono & Salahuddin 2011). It cannot be denied that Indonesia has quite abundant fish resources. This fact can be seen from the vastness of Indonesia's waters and the high level of fish exploitation in this country. With a sea area of 1.9 million square kilometers, Indonesia is the largest archipelagic country in the world. With a length of more than 5000 kilometers, the sea around the Indonesian archipelago has a significant impact on the global fishing industry (Sukamto, 2018). Biodiversity, also known as biodiversity or biological diversity, is a term used to describe the richness of the various forms of life that exist on the planet, from single-celled organisms to higher organisms. Biodiversity includes a variety of living environments, variations in species, both in terms of number and type, as well as genetic variations or variations in traits within these species (Wahyono, 2011).

The high biodiversity in Indonesia can be explained by its position in the tropics, which has various types of habitat and varying levels of distribution isolation (Noerdjito and Maryanto, 2005). In line with plant diversity, Indonesia is also known to have a very high level of fauna diversity, especially in the fisheries sector (Setiawan, 2022). Information from the Ministry of Maritime Affairs and Fisheries, as stated in Decree of the Minister of Maritime Affairs and Fisheries No. 18 of 2011 concerning General Guidelines for Minapolitan 2, revealed that in 2011, the potential of fish resources in Indonesia reached 6.4 million tons/year, with an average utilization rate of around 4.7 million tons/year or around 73.43% (Ferdinand *et al.,* 2016). Therefore, it can be understood that fish is one element in the rich biodiversity in Indonesia.

The Special Region of Yogyakarta (DIY) Province in Indonesia offers high potential in terms of fish resources, which comes from its biodiversity. DIY's location on the southern slopes of Mount Merapi produces many rivers, including the Opak River in Sleman Regency. Rivers in the Yogyakarta region, which always flow throughout the year and never dry up, are a resource that is utilized by the community to improve the welfare of residents along the river

(Hadi, 2020). The Opak River has abundant water discharge, and has a variety of physical conditions such as water brightness levels, flow rates, and different bottom water characteristics. The Opak River has a river flow of around 65 kilometers in length and a river basin area of around 1398.18 square kilometers (Wardhana, 2015). As an estuary for the surrounding rivers, the Opak River is a place with various biological resources in its waters, including a diversity of fish species (Trijoko, 2006). From the diversity of fish in the Opak River, it is necessary to increase data regarding the diversity of fish in the Opak River, especially data which covers the entire river flow from the source to the estuary (Yudha *et al.,* 2020).

Wonogiri Regency is one of the regencies located in Central Java Province which has a southern coastal area. Wonogiri Regency has experienced positive developments with the construction of the Gajah Mungkur Dam which began in 1978 by the Ministry of Public Works and Public Housing (Singgih *et al.,* 2017). Gajah Mungkur Wonogiri Reservoir, which has an area of around 8,800 hectares and has great potential, especially in the fisheries sector (Ferdinan, 2016). Gajah Mungkur Reservoir was formed by damming the river that surrounds it, which resulted in an inlet and outlet area that has unique characteristics in its aquatic ecosystem. Abiotic factors such as water turbidity levels, current speed, temperature, dissolved oxygen (DO) levels, and pH, along with aquatic vegetation, plankton availability, and benthic composition, all play a role in influencing fish distribution patterns, composition, and behavior (Tjokrokusumo , 2008). This certainly has a significant impact on the diversity of fish populations, both in the reservoir and around it (Widiyati & Prihadi, 2017). Adequate water quality provides good support for efforts to increase fisheries production in a sustainable and environmentally sound manner to improve the welfare of residents around the reservoir (Hendrawan, 2023).

Therefore, based on the context that has been presented, a study is needed to investigate fish diversity in various regions that have diverse ecosystems and conditions. The aim of this research is to understand and compare variations in fish types in three different ecosystems, namely the Kali Opak area, as well as the Inlet and Outlet areas of the Gajah Mungkur Reservoir.

METHODS

Place and Time

The research was carried out in 3 different areas, namely the Opak Sleman River, Yogyakarta and the inlet and outlet area of the Gajah Mungkur Wonogiri Reservoir, Central Java. The sampling time was carried out in April – May 2023.

Figure 1. Map of Java Island

Figure 2. Research location (inlet and Outlet of Gajah Mungkur Reservoir)

Figure 3. Research location Kali Opak

Tools and Materials

Alat dan bahan yang digunakan pada saat penelitian di kali opak dan kawasan inlet serta outlet waduk gajah mungkur diantaranya adalah alat penangkap ikan (jala ikan dan pancing), umpan (cacing dan pelet), ember, cool box, es batu, dan garam.

Data Retrieval

The data collection method applied in this research follows the approach used by Sugara *et al.,* (2016). This approach involves direct survey activities in the field and conducting interviews. To collect data, fishing activities were carried out in the inlet and outlet areas using fishing rods, as well as interviewing fishermen or anglers around the two locations. Furthermore, the data that has been collected will be processed and analyzed using descriptive methods, which aim to explain, detail and analyze all the research data obtained. Apart from that, indices such as richness, diversity and evenness index will also be calculated for each data collection location.

Design

a. Species richness index (Margalef)

In this study, calculations were carried out using the Margalef index method, which is also known as the species richness index. The species richness index refers to the total number of species in a certain area. Margalef combines the species richness index with the value of the abundance or density of individuals in each sample unit that has the same size and is placed in a similar habitat or community. The formula for calculating the Margalef Wealth Index can be formulated as follows (Magurran, 2004):

Dmg = (S-1) / ln (N) x

Information:

S = number of species

N = the total number of individuals of all species

Species richness refers to the total number of species present in a particular area. Margalef combines this species richness index with the value of the abundance or density of individuals in each sample of the same size placed in a similar habitat or community. If the R1 value is less than 3.5, it indicates that the level of species richness is low. If the R1 value is between 3.5 to 5.0, it indicates a medium level of species richness, while if the R1 value is more than 5.0, then the level of species richness is considered high (Magurran, 2004).

b. Species Diversity Index (Shannon)

Species diversity is a parameter used to compare two communities, especially in order to understand the impact of biotic disturbances and to assess the level of succession or stability of a community. The fish species diversity index was measured using the Shannon-Wiener

Diversity Index (H') method proposed by Mason (1992) as described by Ridho *et al.,* (2013) in the following formula:

H ’ = -∑ pi log2 pi,

Information:

H ’ = Shannon-Wiener Diversity Index

ni = Number of individuals in the ith taxon

N = The total number of individuals of all taxa in a community pi = ni /N

Magnitude H` < 1,5 shows low species diversity, H` between 1,5 – 3,5 indicates moderate species diversity and H` > 3.5 indicates high diversity (Rachman & Hani, 2017).

c. Species Evenness Index (Evenness)

The evenness index value is used to measure the degree of evenness in the abundance of individual species in a community. Equity describes the balance between one community and another.

E = H′ / ln. S

Information:

E = Evenness index (value between 0-1)

H’ = Shanon Wiener diversity index

S = Number of types

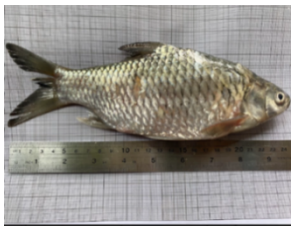
An evenness index value that is close to one indicates that the distribution of species in a community is becoming more even, while if the value is close to zero, the distribution of species is becoming more uneven. The evenness index value ranges from 0 to 1. When this index value reaches 0, this indicates that the level of evenness of plant species in the community is very uneven. Conversely, if the index value is close to 1, this indicates that almost all existing species have a similar level of abundance (Nahlunnisa *et al.,* 2016).

RESULT

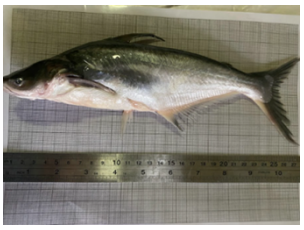
Based on the research that has been carried out, a total of 94 freshwater fish were caught and identified during the research. The 94 freshwater fish were grouped into 6 families, 10 genera and 10 species. Details of these species are presented in Table.1. The number of individuals caught in the three habitats is presented in table 2.

Table 1. Fish species that have been caught in the Opak River and Gajah Mungkur Reservoir ecosystems

No	Famili	Genus	Species	Area name
1	Cyprinidae	Barbonymus	*Barbonymus gonionotus*	Tawes
2	Cyprinidae	Labiobarbus	*Labiobarbus leptocheilus*	Lukas
3	Cyprinidae	Rasbora	*Rasbora argyrotaenia*	Wader pari
4	Cyprinidae	Hampala	*Hampala macrolepidota*	Palung
5	Cichlidae	Oreochromis	*Oreochromis niloticus*	Nila
6	Cichlidae	Amphilophus	*Amphilophus labiatus*	Red Devil
7	Eleotridae	Oxyeleotris	*Oxyeleotris marmorata*	Betutu
8	Pangasiidae	Pangasinodon	*Pangasinodon hypopthalmus*	Patin
9	Loricaridae	Hypostomus	*Hypostomus plecostomus*	Sapu-sapu
10	Bagridae	Mystus	*Mystus nigriceps*	Kebogerang



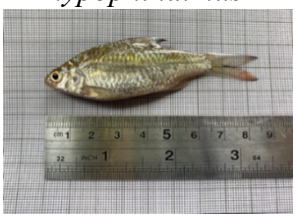
Barbonymus gonionotus



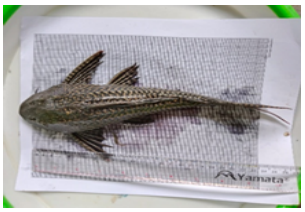
Pangasianodon hypophthalmus

Oreochromis niloticus

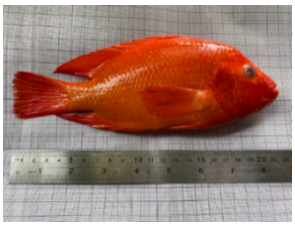
Rasbora argyrotaenia



Labiobarbus leptocheilus

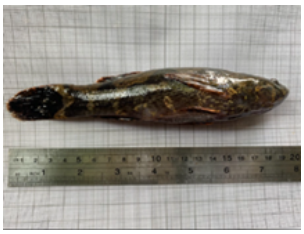


Hypostomus plecostomus



Amphilophus labiatus

Hampala macrolepidota



Oxyeleotris marmorata

Mystus nigriceps

Table 2. Distribution of the Number of Fish Catches in the Opak River and the Gajah Mungkur Reservoir

Spesies	**Kali Opak**	**Inlet WGM**	**Outlet WGM**
Barbonymus gonionotus	5	5	3
Oreochromis niloticus	0	6	5
Labiobarbus Leptocheilus	0	4	0
Amphilophus labiatus	0	14	11
Oxyeleotris marmorata	0	12	13
Pangasianodon hypophthalmus	0	10	0
Rasbora argyrotaenia	0	6	0
Hampala macrolepidota	6	0	0
Hypostomus plecostomus	8	0	0
Mystus nigriceps	4	0	0

Table 3. Results of Calculation of the Wealth, Diversity and Equality Index

	Kali Opak	Inlet WGM	Outlet WGM
Shannon_H	1,419	1,905	1,292
Evenness_e^H/S	1,033	0,9596	0,9099
Margalef	0,9568	1,484	0,8656

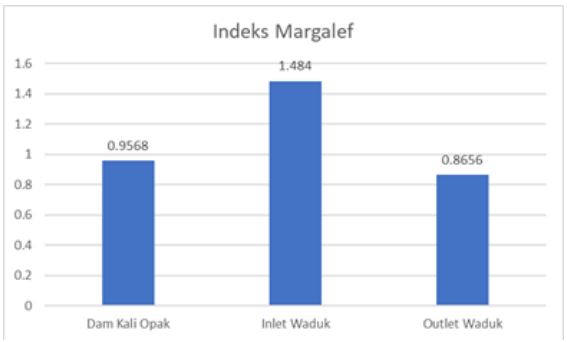


Figure 4. Fish species richness index In the Gajah Mungr and Kali Opak reservoir areas

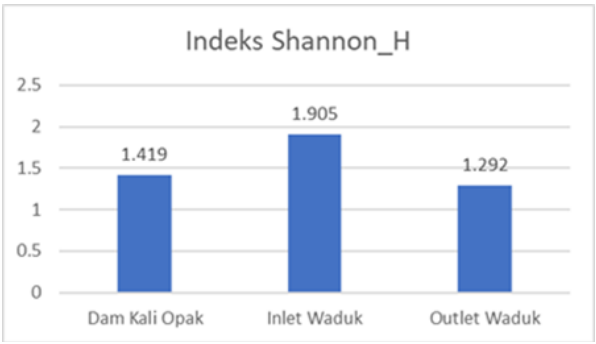


Figure 5. Index of diversity of fish species in the Gajah Mungkur and Kali Opak reservoir areas

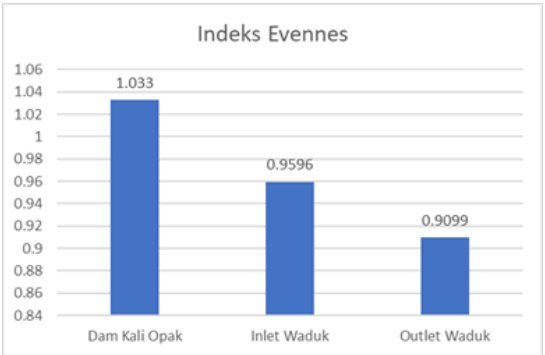


Figure 6. Index of evenness of fish species in the Gajah Mungkur and Kali Opak reservoir areas

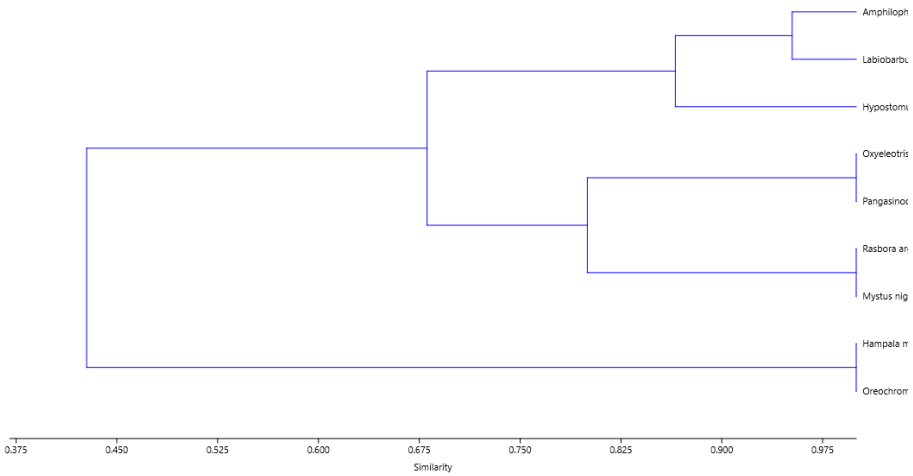


Figure 7. Species Clustering

DISCUSSION

From the results obtained, the most common fish found were fish from the Cyprinidae family. This is because the Cyprinidae family is the family with the largest genus in fresh water (Karahan, 2010 in J Putri, 2014). *Amphilophus labiatus* and *Oxyeleotris marmorata* are the dominant fish found at the inlet and outlet locations of the Gajah Mungkur Reservoir. In fact, *Labiobarbus leptocheilus*, *Rasbora argyrot*, *Barbonymus gonionotus* are endemic fish in the Gajah Mungkur Reservoir. However, it is actually the minimum species found in the area. This phenomenon occurs because many foreign fish seeds are distributed in the reservoir waters, such as *Oreochromis niloticus*, *Oreochromis niloticus* and *Amphilophus labiatus*, causing the endemic fish population in the Gajah Mungkur Reservoir to be threatened with extinction because it is being pushed out by stocked fish. This is due to predation and competition with foreign fish (Nicola *et al.,* 1996), competition for food and habitat (Alcaraz & Garcia-Bethou, 2007) and the failure of local fiqsh to find mates. (Seehausen *et al.,* 1997).

At the Kali Opak location, the most abundant fish is *Hypostomus plecostomus*, which is also known as the broom fish. This may be related to the type of habitat that Opak River has, which has quite fast river flows. At the time of sampling, the condition of the river flow in Kali Opak at that time was classified as fast, which is consistent with findings in research by Sayeed & Azadi (2020), which states that one of the characteristics of a suitable habitat for *Hypostomus plecostomus* is a river with the current is quite strong. On the other hand, the smallest number of specimens found was Mystus nigriceps, perhaps because Kali Opak is not a suitable habitat for *Mystus nigriceps*. Based on research conducted by Sulistiyo & Setijanto (2002), it is known that the habitat preferred by *Mystus nigriceps* fish includes various types of water, both shallow and deep, with the bottom of the water consisting of a mixture of sand, gravel, rocks, and sometimes overgrown with moss.

Then at the Gajah Mungkur Reservoir Inlet location, the most common fish found is *Amphilophus labiatus* which is a predatory fish, because besides its role as a predator, *Amphilophus labiatus* is also a fish that lives in fast streams, but can also livein moderate streams, apart from that, *Amphilophus labiatus* has a high breeding rate but is less popular with the local community and does not have high economic value, so the *Amphilophus labiatus* species is the most commonly found fish. This is confirmed by research conducted by Fatma in 2017, which noted that the population of *Amphilophus labiatus* continues to grow. increases over time due to its very fast reproductive ability. Apart from that, this fish also has no economic value on the market. Meanwhile*, Labiobarbus Leptocheilus* is the fewest fish species found, namely 4, because *Labiobarbus Leptocheilus* is a fish that is often found in waters with high currents, as in the study conducted by Cahyono *et al.,* (2018) which states that *Labiobarbus Leptocheilus* has a torpedo-shaped body so it can survive in strong currents. This torpedo body shape will reduce frictional forces due to high current speeds.

At the Gajah Mungkur Reservoir Outlet location, it is dominated by the *Oxyeleotris marmorata* species, this is because the outlet area has a substrate in the form of sand and stone (Lestari *et al.,* 2020) which substrate is used for *Oxyeleotris marmorata* to reproduce. This is in accordance with research conducted by the Maritime Affairs and Fisheries Service. East Kalimantan Fisheries & Mulawarman University (2022) that *Oxyeleotris marmorata* eggs are attached, so the availability of substrate in the form of rocks or plant stems is an important aspect in spawning *Oxyeleotris marmorata*. *Oxyeleotris marmorata* also has a torpedo body shape so it can survive in strong currents. Meanwhile, the species *Barbonymus gonionotus* is the least common species found in the Gajah Mungkur Reservoir Outlet. Even though *Barbonymus gonionotus* generally lives in waters with strong currents, this is in accordance with a study conducted by Slamet & Azizi (2020) that the *Barbonymus gonionotus* fish has a slender physical shape and a tall body prepared to face aquatic environments with strong

currents. However, based on a study conducted by Triwardani *et al.,* (2022) *Barbonymus gonionotus* has a low egg hatchability, namely only being able to produce 22% of 10,000 eggs. This may be the reason why there are few species of *Barbonymus gonionotus* in the Gajah Mungkur Reservoir Outlet area. These differences in fishing areas produce different fish diversity. Based on research that has been conducted, the Gajah Mungkur Reservoir inlet area has greater fish richness and diversity compared to the Opak River and the reservoir outlet area. However, the Kali Opak area has higher evenness compared to the other two areas.

Kali Opak has a species richness of 0.9568. The Gajah Mungkur Reservoir Inlet Habitat has a species richness of 1,484. Species richness at the Gajah Mungkur Reservoir Inlet is the highest compared to the level of richness at the Gajah Mungkur Reservoir Outlet and Opak River. The Gajah Mungkur Reservoir Outlet has a species richness of 0.8656, this shows that the Gajah Mungkur Reservoir Outlet is a habitat with the lowest richness index when compared to the Opak River and the Gajah Mungkur Reservoir Inlet. The difference in margalef index values is influenced by the size of an area, the larger the area, the greater the margalef index value or species richness index. This is in accordance with research conducted by Boontawe *et al.,* (1995) which states that the margalef index value is influenced by the area of a region. From the margalef index obtained, it can be concluded that the level of species richness based on data obtained at the three locations is relatively low, this indicates a low level of species diversity in the ecosystem found at the three locations (Kali Opak, Inlet and Outlet WGM). This is in accordance with the opinion expressed by Magurran, 2004, that an amount of R1 < 3.5 indicates low species richness, R1 between 3.5 - 5.0 indicates medium species richness and R1 > 5.0 is considered high. It can be said to be low because few species were obtained when sampling was carried out using survey and interview methods. This data also has a relationship with the method used.

Kali Opak has a species diversity of 1,419. At the inlet of the Gajah Mungkur Reservoir, a species diversity of 1,905 was obtained, where the level of species diversity at the inlet of the Gajah Mungkur Reservoir was the highest among the two other observation locations. At the outlet of the Mungkur Gajah Reservoir, a species diversity of 1,292 was obtained, which is the lowest level of species diversity among the other two observation locations. Variations in the number of individuals of each species present influence differences in the values of the Shannon index or species diversity index. In other words, the fewer the number of species and the variation in the number of individuals in each species, the lower the ecosystem diversity will be, and vice versa. This is in accordance with research conducted by Sriwidodo *et al.,* (2013) which states that the level of species diversity in a region depends on variations in the number of individuals of each species obtained. From the results of the Shannon index, it can be seen that the level of species diversity in the Opak River is low, the species diversity index in the Gajah Mungkur Reservoir Inlet is moderate, and the diversity index of the Gajah Mungkur Reservoir Outlet is low, this is in accordance with the statement of Rachman & Hani, 2017, that if An H value < 1.5 indicates a low level of species diversity. If the H value ranges from 1.5 to 3.5, then the level of species diversity is considered moderate. Meanwhile, if H` > 3.5, it indicates a high level of species diversity. The relatively moderate species diversity in the Gajah Mungkur Reservoir Inlet means that the stability of the ecosystem in the Inlet area is also moderate and is still vulnerable to disturbances. This is in accordance with a study conducted by Odum in 1996 which stated that there was a relationship between the level of diversity and ecosystem stability. In situations where ecosystem diversity is high, the ecosystem tends to be more stable. On the other hand, when diversity in an ecosystem decreases, for example due to pollution, its stability tends to decrease.

Based on the results of calculating the Evennes index or species evenness index in the 6 families found in the Kali Opak area and the inlet and outlet areas of the Gajah Mungkur

Reservoir, the following results were obtained: at the Opak River, the species evenness was 1,033, where the level of species evenness at the Opak River was the highest among two other observation locations. At the Mungkur Gajah Reservoir inlet, a species evenness value of 0.9596 was obtained, where the species evenness level at the reservoir inlet was the lowest compared to the other two observation locations. At the Gajah Mungkur reservoir outlet, an evenness index value of 0.9099 was obtained. The uniformity index reflects the extent to which individuals of each type are found evenly. If each type has a similar number of individuals, then the uniformity index value will reach its peak. Conversely, if the uniformity index value is low, it indicates that there are certain types that dominate, resulting in a minimal uniformity index value in that area. The evenness or evenness value has a value range of 0-1, if the index value obtained is closer to 1, the distribution will be more even (Ismaini *et al.,* 2015).

Differences in evenness values between each area indicate that there are species that dominate or have high individual values. From the results of calculating the species evenness index, it can be seen that the species evenness index in the Kali Opak, Inlet and Outlet areas of the Gajah Mungkur Reservoir, almost all species have the same or even abundance, according to Nahlunnisa *et al.,* (2016) the evenness index value ranges between 0-1, if the value is 0 it shows that the level of evenness of species in the community is very uneven, whereas if the value is close to 1 then almost all existing species have the same abundance, this is in accordance with the data obtained, namely 0.9099 ; 0.9596 ; 1,033 is a type of high evenness, which means that the distribution of individuals/types is more uniform so that distribution tends to be more even (Ridho *et al.,* 2019).

CONCLUSION

There are differences in the types of fish found in the Opak River and the inlet outlet area of the Gajah Mungkur Wonogiri Reservoir. At the Opak River, 4 types of species were found, at the inlet of the Gajah Mungkur Reservoir, 7 types of species were found. Meanwhile, at the outlet of the Gajah Mungkur Reservoir, 4 types of species were found. The species *Hampala macrolepidota*, *Hypostomus plecostomus*, and *Mystus nigriceps* are only found in the Opak River. Meanwhile, *Rasbora argyrotaenia* and *Labiobarbus Leptocheilus* were only found in the Gajah Mungkur Reservoir Inlet. Based on the results of calculations using the Shannonkan index, the Gajah Mungkur Reservoir Inlet has moderate species diversity (H' 1.5-3.5). This is different from the Inlet and Kali Opak areas where both places have low diversity (H' < 1.5). The results of calculating species richness using the Margalef Index show that the Gajah Mungkur Reservoir Inlet has the highest richness compared to the Opak River and the Gajah Mungkur Reservoir Inlet. However, the three research locations have low wealth values (RI < 3.5). Meanwhile, the results of calculating Evenness or the level of evenness of species in the three regions show almost the same results, namely close to number one. This means that the three areas have an even level of evenness.

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