

DIVERSITY OF FISH SPECIES IN BAGU VILLAGE, PRINGGARATA DISTRICT, CENTRAL LOMBOK REGENCY**Eka Sulistiyawati¹, Slamet Mardiyanto Rahayu²****^{1,2}Universitas Islam Al-Azhar, Mataram, Indonesia****¹Email: sulistiyaeka0@gmail.com****²Email: slamet.mardiyantorahayu84@gmail.com****Article Info***Article History**Send : 27/10/2026**Received : 28/10/2026**Revised : 28/10/2026**Accepted : 29/10/2026***Abstract**

*This study aimed to determine the diversity of fish species found in Bagu Village, Pringgarata District, Central Lombok Regency, West Nusa Tenggara Province. Bagu Village has various aquatic ecosystems, including rivers, ponds, reservoirs, swamps, and rice fields that potentially provide habitats for various fish species. The study was conducted using exploration and direct observation methods at several aquatic locations in Bagu Village. The data collected included local names, scientific names, and habitats of the fish species observed. The results showed that 10 fish species were identified, namely: *Anabas testudineus*, *Clarias batrachus*, *Channa striata*, *Osphronemus goramy*, *Oreochromis niloticus*, *Oreochromis mossambicus*, *Cyprinus carpio*, *Anguilla bicolor*, *Rasbora argyrotaenia*, and *Monopterus albus*. These species were found in different habitats, including rivers, ponds, reservoirs, swamps, and rice fields. The presence of these fish species indicates that Bagu Village has considerable aquatic biodiversity potential. This study is expected to provide preliminary information on fish diversity and increase public awareness of the importance of conserving aquatic ecosystems in Bagu Village.*

Keywords: *Fish diversity, fish species, aquatic ecosystems, Bagu Village, habitat*

1. INTRODUCTION

Bagu Village is a village located in Pringgarata District, Central Lombok Regency, West Nusa Tenggara Province. Bagu Village covers an area of 3.17 km². The village has a population of 7,170 people, consisting of 3,529 males and 3,641 females (Central Statistics Agency of Central Lombok Regency, 2025).

Aquatic ecosystems in and around the village are potential habitats for various fish species, making them important areas for investigating local aquatic biodiversity. Documenting fish species diversity is an essential step toward understanding the composition of aquatic biological communities and establishing baseline information on local biodiversity (IUCN, 2021).

Fish species diversity represents an important component of aquatic biodiversity and provides information about the variety of species inhabiting a particular ecosystem. Fish species composition may vary according to habitat characteristics, water quality, environmental conditions, and human activities. Therefore, identifying fish species present in a particular area is important for

describing local biodiversity and improving scientific understanding of aquatic communities. Previous research on freshwater fish in Indonesia has highlighted the importance of documenting fish species diversity across different aquatic habitats (Ainy et al., 2026).

This study aims to determine the diversity of fish species in Desa Bagu, Pringgarata District, Central Lombok Regency, West Nusa Tenggara, Indonesia. The research focuses on identifying the fish species found in the study area and describing the diversity of fish species based on their occurrence in the observed aquatic habitats. The findings are expected to provide baseline information on fish species diversity in Desa Bagu and contribute to the scientific documentation of local aquatic biodiversity.

2. METHOD

This study employed an exploratory and observational approach to investigate fish species diversity in Bagu Village, Pringgarata District, Central Lombok Regency, West Nusa Tenggara, Indonesia. Field observations were conducted to explore aquatic habitats and identify the fish species encountered within the study area. The collected data focused on documenting the diversity of fish species present in the observed locations. Species identification was based on the morphological characteristics of the fish and relevant taxonomic references.

Data analysis was conducted using a descriptive approach, involving the systematic organization, classification, and interpretation of the collected observations. The results were used to describe the fish species diversity in Bagu Village and provide an overview of the local aquatic biodiversity.

3. RESULTS AND DISCUSSION

This study documented 10 fish species in Bagu Village, Pringgarata District, Central Lombok Regency, West Nusa Tenggara, Indonesia. The identified species included *Anabas testudineus*, *Clarias batrachus*, *Channa striata*, *Osphronemus goramy*, *Oreochromis niloticus*, *Oreochromis mossambicus*, *Cyprinus carpio*, *Anguilla bicolor*, *Rasbora argyrotaenia*, and *Monopterus albus*.

Local Name	Scientific Name	Habitat
Betok, Mapak betook	<i>Anabas testudineus</i>	Bagu river, dam
Local catfish, Sembiur	<i>Clarias batrachus</i>	Bagu river
Snakehead fish	<i>Channa striata</i>	Bagu river
Gourami	<i>Osphronemus goramy</i>	Bagu river
Nile tilapia	<i>Oreochromis niloticus</i>	ponds, dam
Mozambique tilapia	<i>Oreochromis mossambicus</i>	ponds, Bagu river
Common carp	<i>Cyprinus carpio</i>	ponds, Bagu river
Sidat, Tokok	<i>Anguilla bicolor</i>	swamps, Bagu river
Wader, Kepait	<i>Rasbora argyrotaenia</i>	Bagu river
Belut sawah, Lindung	<i>Monopterus albus</i>	rice fields, Bagu river

Anabas testudineus, commonly known as the climbing perch, is a freshwater fish belonging to the family Anabantidae. It has a laterally compressed body,

relatively large scales, and coloration ranging from greenish to brownish, with a lighter ventral surface. This species possesses an accessory respiratory organ that enables it to utilize atmospheric oxygen and survive in aquatic environments with low dissolved oxygen concentrations. It commonly inhabits ponds, rivers, canals, wetlands, and other freshwater environments. Morphological variation among populations may be associated with differences in habitat characteristics and environmental conditions (Hossain et al., 2023).

Clarias batrachus, commonly known as the walking catfish, belongs to the family Clariidae. It is characterized by an elongated body, a broad and flattened head, and sensory barbels surrounding the mouth. These barbels facilitate the detection of food in turbid water and near-bottom habitats. The species possesses an accessory respiratory organ that enables it to tolerate aquatic environments with limited dissolved oxygen. It is commonly associated with swamps, ponds, streams, rice fields, and other freshwater habitats. These characteristics contribute to its ability to persist under a range of environmental conditions.

Channa striata, commonly known as the striped snakehead, belongs to the family Channidae and is an important predatory freshwater fish in South and Southeast Asia. It has an elongated body, a broad and flattened head, a large mouth, and long dorsal and anal fins. Its coloration is generally brownish or olive, with darker markings along the body. The species is capable of breathing atmospheric oxygen, enabling it to tolerate aquatic environments with low dissolved oxygen. It inhabits rivers, swamps, ponds, floodplains, and irrigation canals, where it feeds primarily on smaller fish and other aquatic animals (Pervin et al., 2026).

Osphronemus goramy, commonly known as the giant gourami, is a freshwater fish belonging to the family Osphronemidae. It is characterized by a deep, laterally compressed body, a relatively small head, and elongated dorsal and anal fins. Juveniles commonly exhibit dark vertical bars that become less prominent as the fish matures. The species is associated with tropical freshwater habitats, including ponds, lakes, reservoirs, and slow-flowing waters. Its capacity to adapt to relatively calm freshwater environments and its value as a food fish have made it an important species in freshwater aquaculture in Southeast Asia (Kottelat et al., 1993).

Oreochromis niloticus, commonly known as Nile tilapia, belongs to the family Cichlidae. It has a deep, laterally compressed body and characteristic vertical bands on the caudal fin. Its coloration varies with age, sex, and reproductive condition. This species commonly inhabits shallow tropical freshwater environments, including lakes, rivers, reservoirs, and ponds. It is an omnivorous feeder that consumes phytoplankton, periphyton, aquatic plants, detritus, and small invertebrates. Its broad diet and adaptability to different environmental conditions have contributed to its widespread use in aquaculture (Food and Agriculture Organization of the United Nations [FAO], 2009).

Oreochromis mossambicus, commonly known as Mozambique tilapia, is a cichlid fish native to southern Africa and introduced to many regions for aquaculture. It has a laterally compressed body, a moderately deep profile, and coloration that varies according to sex and reproductive condition. The species can inhabit rivers, lakes, ponds, reservoirs, and brackish-water environments. Its tolerance of varying salinity and environmental conditions enables it to survive in diverse aquatic habitats. Nevertheless, populations established outside their native

range may compete with native species and affect local aquatic communities (Canonico et al., 2005).

Cyprinus carpio, commonly known as the common carp, belongs to the family Cyprinidae. It has a robust, somewhat laterally compressed body, thick lips, and two pairs of barbels near the corners of the mouth. Its coloration is generally brownish-green on the dorsal surface and golden or yellowish on the ventral surface, although variation occurs among strains. The species typically inhabits the middle and lower reaches of rivers, shallow lakes, reservoirs, and ponds with soft substrates. It is an omnivorous bottom-feeding fish that consumes benthic invertebrates, plant material, and other available food resources (FAO, 2009).

Anguilla bicolor, commonly known as the Indonesian shortfin eel, belongs to the family Anguillidae. It has an elongated, cylindrical body, lacks pelvic fins, and possesses long dorsal and anal fins. This species exhibits a catadromous life cycle, whereby individuals grow in freshwater or brackish-water habitats and migrate to the sea for reproduction. Research on tropical anguillid eels has demonstrated that *A. bicolor* can utilize habitats with varying salinity levels and migrate between different aquatic environments. These ecological characteristics make the species an important component of riverine and estuarine ecosystems in Southeast Asia (Arai et al., 2020).

Rasbora argyrotaenia, commonly known as silver rasbora or bileh fish in parts of Indonesia, is a small freshwater fish traditionally classified within the family Cyprinidae. It has an elongated, laterally compressed body with a silvery appearance and darker pigmentation along the dorsal region. The species is associated with freshwater habitats, including lakes and rivers, and may move between connected aquatic environments. Research conducted in Ie Sayang Lake, West Aceh, investigated the habitat characteristics and occurrence of this species, demonstrating the relevance of habitat assessment in understanding its distribution in freshwater ecosystems (Astuti & Fitrianiingsih, 2018).

Monopterus albus, commonly known as the Asian swamp eel, belongs to the family Synbranchidae. It has a long, cylindrical body without scales, pectoral fins, or pelvic fins, giving it a distinctive eel-like appearance. The species is adapted to low-oxygen environments and can obtain oxygen from the atmosphere through specialized, highly vascularized tissues in the buccopharyngeal region. It commonly inhabits swamps, rice fields, muddy ponds, canals, and other shallow freshwater environments. Its ability to tolerate hypoxic conditions and remain in moist sediment during periods of reduced water availability contributes to its persistence in seasonally variable aquatic habitats (Damsgaard et al., 2014).

4. CONCLUSION AND RECOMMENDATIONS

This study documented 10 fish species in Bagu Village, Pringgarata District, Central Lombok Regency, West Nusa Tenggara, Indonesia. The identified species included *Anabas testudineus*, *Clarias batrachus*, *Channa striata*, *Osphronemus goramy*, *Oreochromis niloticus*, *Oreochromis mossambicus*, *Cyprinus carpio*, *Anguilla bicolor*, *Rasbora argyrotaenia*, and *Monopterus albus*. These species were recorded across various aquatic habitats, including rivers, ponds, dams, lakes, swamps, and rice fields, indicating that the study area supports a variety of fish species associated with different aquatic environments. The findings provide preliminary information on fish species diversity in Bagu Village and serve as

baseline data for further biodiversity research and the sustainable management of local aquatic ecosystems.

Based on these findings, further studies are recommended to be conducted across different seasons and in a wider range of aquatic habitats in Bagu Village, using more systematic sampling methods and complementary analyses such as species abundance, diversity indices, and water quality parameters, so that the structure of the fish community can be described more comprehensively. Local communities and village authorities are encouraged to maintain the quality of rivers, dams, ponds, swamps, and rice fields, to avoid destructive fishing practices, and to manage introduced species such as *Oreochromis mossambicus* carefully so that native fish species are not displaced. In addition, the results of this study can be used as baseline information for local conservation planning and environmental education on the importance of aquatic biodiversity.

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6. AUTHOR CONTRIBUTION STATEMENT

Eka Sulistiyawati contributed to the conceptualization of the study, field observations, data collection, species identification, and the writing of the original draft. Slamet Mardiyanto Rahayu contributed to the research methodology, supervision, data validation, and the review and editing of the manuscript. All authors have read and approved the final version of the manuscript and are responsible for its content.

7. CONFLICT OF INTEREST STATEMENT

The authors declare that there are no financial, personal, or professional conflicts of interest that could have influenced the research or the preparation of this article.

8. RESEARCH ETHICS STATEMENT

This study was conducted through non-invasive field exploration and direct observation of fish species in the aquatic habitats of Bagu Village, Pringgarata District, Central Lombok Regency. No experimental treatment was applied to the fish, and no human participants were involved as research subjects. Therefore, formal ethical approval was not required. Field observations were carried out with the knowledge of the local community and with respect for the local environment.

9. DATA AVAILABILITY

The data supporting the findings of this study, including the local names, scientific names, and habitats of the fish species, are presented in the Results and Discussion section of this article. Additional field observation data are available from the corresponding author upon reasonable request.

10. GENERATIVE ARTIFICIAL INTELLIGENCE USE STATEMENT

The authors used generative artificial intelligence tools only to assist with language editing and the formatting of the manuscript. The research design, field observations, species identification, data analysis, and interpretation of the results were carried out by the authors. The authors reviewed and verified all content generated with the assistance of these tools and take full responsibility for the content of this article.

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