

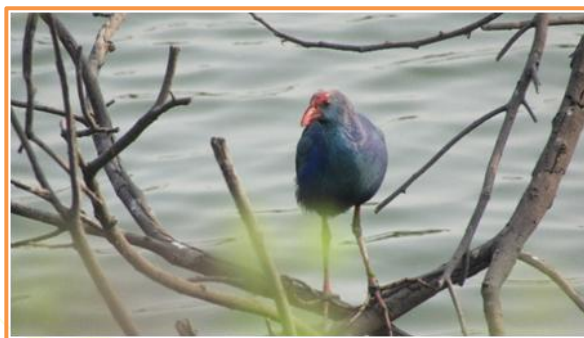
Purple Moorhen (*Porphyrio porphyrio*): Biology, Ecological Role, Habitat, Agricultural Damage and Management

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The Purple Moorhen is a waterbird, commonly referred to as an aquatic bird or waterfowl - and is typically found in or near water bodies. These birds take shelter and find their food in reservoirs, rivers, lakes and wetlands. The Purple Moorhen, also known as 'Neel Jalmurgho', is one of the most attractive and colourful birds in the water bodies of Gujarat. Because of its beautiful appearance and unique way of walking, it is recognized among bird lovers. From an ecological viewpoint, these birds are important for maintaining a balanced environment. However, due to the loss of natural habitats, Purple Moorhens have started to move into agricultural areas, causing a challenge for farmers. To deal with this issue, it is important to focus on wetland conservation and use scientific ways to protect crops.



Identification

The Purple Moorhen, scientifically known as *Porphyrio porphyrio*, is commonly referred to as the Purple Moorhen or Purple Swamphen. This bird belongs to the Rallidae family. In the ecosystem, it plays an important role, especially in controlling aquatic plants and influencing nutrient cycling. The Purple Moorhen is a medium to large waterbird. It typically measures between 45 to 50 centimetres in length and weighs between 600 to 900 grams. Its body is beautifully coloured in shades of blue and purple, making it easily recognizable. The bird has a large red beak and a red shield-like structure on its forehead, which is a distinctive feature. Its long legs and toes enable it to walk easily on floating plants and soft mud. This physical structure helps it navigate through marshy and waterlogged fields. The Purple Moorhen is mostly herbivorous but sometimes consumes animal matter when available. It feeds on soft aquatic plants like *Typha angustifolia*, *Eichhornia crassipes* and *Phragmites karka*. It also eats tender rice seedlings, sugarcane shoots, mustard and various grasses. Occasionally, it feeds on insects, molluscs and small fish. While feeding, it often holds a plant with one foot and tears it apart with its beak, which is a unique feeding behaviour. During the breeding season in South Asia, which usually occurs during the monsoon from June to September, Purple Moorhens build platform-like nests made of aquatic plants and vegetation in water or marshy areas. The female typically lays 3 to 7 eggs. The incubation period lasts

approximately 23 to 27 days and both the male and female share the responsibility of incubating the eggs. In some regions, cooperative breeding has been observed, with other group members helping to raise the chicks.

Ecological Role and Habitat Preference

1. Distribution and Habitat

The Purple Moorhen found in various parts of the world, including South and Southeast Asia, Africa, Southern Europe and Australia. In India, its commonly found in wetlands such as lakes, rice fields, irrigation canals, farm ponds and mudflats. It prefers areas with dense vegetation, as these provide suitable conditions for nesting, resting and protection from predators. Agricultural fields, which retain water and have rich vegetation, offer conditions similar to natural wetlands, making them ideal for this bird.

2. Ecological Role in the environment

This bird has several important functions. It helps in controlling the growth of aquatic plants, keeping the aquatic ecosystem in balance. It also contributes to nutrient cycling. The presence of the Purple Moorhen is often an indicator of the health of wetland ecosystems.

Agricultural Crop Damage

The Purple Moorhen causes damage to several crops, including rice, wheat, mustard, sugarcane, maize and sorghum. Damage includes the pulling out of planted rice seedlings, consumption of germinating grains, and the cutting or uprooting of plants during feeding on their soft basal parts. This kind of damage has often been seen in areas that are 20 to 30 meters from marshes or bodies of water. The primary reason for this damage is that agricultural fields offer shallow water, abundant vegetation and protection—conditions analogous to natural wetlands. The expansion of irrigation systems has increased these favourable habitats, thereby exacerbating crop damage.

Management

To reduce the damage caused by Purple moorhens to crops, it is recommended to use non-lethal management methods.

- ❖ **Nylon Netting:** Covering the rice nursery with nylon or cotton nets prevents birds from access to the plants.
- ❖ **Reflective Ribbon:** The installation of reflective ribbon in agricultural fields serves as an effective visual deterrent, as the intermittent flashes of reflected sunlight discourage bird activity.
 - The ribbon should be stretched along a north–south axis.
 - It should be positioned approximately 45 cm above the crop canopy.
 - A twist should be introduced every 1 metre, and the ribbon should be secured to sturdy poles placed at 5-metre intervals.
 - This approach is most effective under sunny conditions.
- ❖ **Solar-Powered Lights:** Flashing solar-powered lights at night also help deter birds.
- ❖ **Auto Cracker Station:** Some farmers use automatic crackers that produce loud noises at intervals to scare birds away.
- ❖ **Habitat Modification:** Removing dense vegetation around the field reduces the hiding places for birds.
- ❖ **Rope Grid Method:** In some areas, a rope grid should be installed above crops to prevent birds from landing. It is essential for farmers to start protecting crops from the nursery or early planting stages. Using a combination of methods is more effective than relying on just one. Changing methods periodically also prevents birds from becoming used to them. Working together with neighbouring farmers can enhance the effectiveness of management efforts.

Conservation

The Purple moorhen was classified by the International Union for Conservation of Nature (IUCN) as "Least Concern", indicating that there is currently no immediate threat to its global population. However, the bird still faces significant challenges such as wetland destruction, pollution, illegal hunting and habitat loss. Therefore, it is crucial to maintain a balance between wetland conservation and agricultural production when creating conservation policies.

References

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