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Community-Based Bird Conservation Practices in Rural Rajasthan: A Case Study from Jalore

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Abstract

This paper, *Community-Based Bird Conservation Practices in Rural Rajasthan: A Case Study from Jalore* explores the role of traditional knowledge and community participation in bird conservation practices in rural Rajasthan, with a focused case study of Jalore district. Rajasthan's arid landscape, though seemingly inhospitable, harbors a rich avifaunal diversity, largely sustained through localized conservation ethics deeply embedded in cultural and religious values. Drawing on ethnographic fieldwork, semi-structured interviews, and participatory rural appraisal (PRA) techniques, this research examines how indigenous communities in Jalore engage in bird-friendly agricultural practices, ritual protections, and habitat preservation without formal conservation frameworks. The study highlights the symbiotic relationship between community livelihoods and ecological stewardship, where conservation is often an unarticulated but lived practice. Particular attention is paid to the role of Bishnoi and other local communities whose spiritual and moral codes emphasize non-violence and coexistence with wildlife. The findings suggest that these community-based practices, though informal and largely undocumented, contribute significantly to the conservation of threatened and migratory bird species in the region. The research also addresses the challenges posed by modernization, habitat loss, and shifting socio-economic dynamics, calling for an integrative approach that bridges traditional ecological knowledge (TEK) with formal conservation strategies.

Keywords: Community-Based Conservation, Indigenous Knowledge, Bird Conservation, Rajasthan, Jalore, Traditional Ecological Knowledge (TEK), Rural Sustainability, Bishnoi Community, Avian Biodiversity, Participatory Approaches

1.1 Introduction

The conservation of biodiversity, especially avifauna, in ecologically sensitive and arid landscapes such as Rajasthan, India, is increasingly gaining attention due to the dual pressures of habitat degradation and climate change. Jalore district, located in the western part of Rajasthan, is a semi-arid region characterized by low rainfall, sparse vegetation, and high temperatures. Despite these ecological constraints, the area sustains a remarkable diversity of bird species, including several migratory and threatened ones. This phenomenon can be largely attributed to the traditional practices and belief systems of rural communities who have lived in harmony with nature for generations. Community-based conservation, grounded in indigenous knowledge systems, has emerged as a viable alternative to top-

down conservation models, particularly in areas where formal mechanisms are weak or absent (Berkes, 2004; Gadgil, Berkes, & Folke, 1993).

The significance of community-based conservation (CBC) lies in its ability to merge livelihood concerns with biodiversity goals, often leading to more sustainable and culturally acceptable outcomes. Unlike centralized conservation policies that may alienate local stakeholders, CBC recognizes the agency of rural communities in managing natural resources. In Rajasthan, specific communities such as the Bishnois exemplify this approach through their spiritual reverence for all living beings, including birds, which translates into effective, though informal, conservation practices (Kothari et al., 1998). These localized practices reflect a deep-rooted ecological ethic that predates modern conservation discourse and continues to play a vital role in species protection.

This study seeks to explore the scope, depth, and challenges of community-based bird conservation practices in rural Rajasthan, using Jalore district as a focused case study. The research aims to identify traditional practices that contribute to avian conservation, understand the socio-cultural drivers behind these practices, and assess how these informal mechanisms interact with or resist external forces such as development, policy interventions, and climate variability. By documenting and analyzing these practices, the study contributes to the broader discourse on integrating traditional ecological knowledge (TEK) into contemporary conservation frameworks.

1.2 Study Area: Jalore District, Rajasthan

Jalore district is located in the southwestern part of Rajasthan, forming a segment of the arid to semi-arid zone of India. Covering an area of approximately 10,640 square kilometers, it lies between latitudes 24°37′ N to 25°45′ N and longitudes 71°11′ E to 72°51′ E. The topography is largely flat and interspersed with low-lying hills of the Aravalli range in the east, while the western part gradually merges into the Thar Desert. The region experiences extreme climatic conditions, with summer temperatures soaring above 45°C and scanty annual rainfall averaging 412 mm, mostly during the monsoon season (District Statistical Handbook, 2021). Despite its aridity, Jalore supports a range of microhabitats—such as dry deciduous scrub, agricultural fields, traditional water bodies (johads), and village groves—that sustain a variety of bird species.

The vegetation is largely xerophytic, dominated by species such as *Prosopis juliflora*, *Acacia senegal*, and *Ziziphus mauritiana*. While forest cover is sparse and fragmented, community-managed grazing lands and agroforestry plots provide critical ecological functions. Water availability is largely dependent on seasonal rainfall and groundwater sources, making water conservation structures like nadi (ponds) and talab (reservoirs) vital for both human and wildlife survival (Sharma & Meena, 2019). These features contribute to a dynamic but fragile ecosystem that supports a significant, though under-researched, diversity of birdlife.

Jalore is predominantly agrarian, with agriculture and livestock rearing forming the primary occupations. Major crops include bajra (pearl millet), moong (green gram), and mustard, with a growing reliance on tube-well irrigation in certain pockets. The district has a mixed population comprising Rajputs, Jats, Bishnois, Meghwals, and other communities, each with distinct cultural identities and ecological

practices. The Bishnoi community, in particular, is renowned for its strict environmental ethos rooted in the 29 tenets laid down by Guru Jambheshwar, which emphasize non-violence toward animals and conservation of flora and fauna (Kothari et al., 1998).

Cultural traditions across Jalore include numerous festivals and rituals that link human welfare with ecological prosperity, such as tree-planting ceremonies, protection of nesting trees, and non-interference during bird breeding seasons. Women play a crucial role in water management and seed preservation, while elderly community members often serve as custodians of oral ecological knowledge. Social cohesion and caste-based responsibilities further reinforce informal governance over natural resources, making Jalore a strong example of community-mediated environmental stewardship (Pathak, 2002).

Despite its harsh climate, Jalore hosts a surprisingly rich avifaunal diversity. Over 150 bird species have been reported from the region, including resident species like the Indian Peafowl (*Pavo cristatus*), Red-vented Bulbul (*Pycnonotus cafer*), and Green Bee-eater (*Merops orientalis*), as well as migratory birds such as the Demoiselle Crane (*Grus virgo*) and Bar-headed Goose (*Anser indicus*) (Rahmani, 2012). Wetlands and man-made water bodies become critical stopovers for migratory birds during the winter months. Scrublands and fallow fields also support ground-nesting birds like the Indian Courser (*Cursorius coromandelicus*) and the endangered Great Indian Bustard (*Ardeotis nigriceps*), although sightings of the latter have become increasingly rare due to habitat degradation.

Bird conservation in Jalore is largely incidental and community-driven. Practices such as non-harvesting of crops in border areas, protection of nesting sites on farmland, and prohibition against hunting—especially among the Bishnois—have created de facto safe zones for avian life. These efforts, although informal and rarely documented, contribute significantly to maintaining avian diversity in a region otherwise marked by ecological vulnerability and policy neglect (Singh & Sharma, 2015). As such, Jalore presents a compelling case for studying the intersections of traditional knowledge, community behavior, and biodiversity conservation.

1.3 Methodology

Research Design and Approach

This study adopts a qualitative case study approach to investigate community-based bird conservation practices in Jalore district, Rajasthan. The case study method allows for an in-depth, context-rich examination of social phenomena, particularly where cultural and ecological dynamics intersect (Yin, 2018). A qualitative framework is particularly suited to this research, as it prioritizes local perspectives, traditional knowledge systems, and community experiences that are often not captured by quantitative tools alone (Creswell & Poth, 2017). The research is exploratory in nature, aimed at uncovering the underlying mechanisms, beliefs, and practices that contribute to informal avian conservation within rural settings.

Data Collection Methods- Three primary data collection methods were employed: **semi-structured interviews**, **participatory rural appraisal (PRA)** techniques, and **field observations**.

- **Semi-structured interviews** were conducted with a range of stakeholders including local farmers, elders, women, religious leaders, and community-based organizations. The interview

guides focused on traditional ecological knowledge, conservation practices, seasonal bird patterns, and perceived changes over time.

- **Participatory Rural Appraisal (PRA)** methods such as social mapping, resource mapping, and seasonal calendars were used in village settings to facilitate collective memory and shared narratives around conservation practices (Chambers, 1994).
- **Field observations** were conducted over multiple visits during pre- and post-monsoon periods to document bird activity, nesting behavior, land use, and ecological interactions. Observations were also made during religious or community events that implicitly or explicitly involved conservation themes.

Field notes, audio recordings, and photographs were maintained as part of the research documentation.

Sampling Strategy

The study followed a **purposive sampling** strategy to identify villages and participants that are actively engaged in traditional conservation practices. Particular emphasis was placed on selecting communities with known ecological ethics, such as the Bishnoi settlements in Jalore. Five villages were selected based on proximity to known bird habitats, availability of traditional water bodies, and evidence of community stewardship. Within these villages, participants were chosen to ensure a balance of age, gender, and social roles. A total of 35 interviews were conducted, with additional focus group discussions held in two villages to corroborate and enrich individual narratives.

Data Analysis Techniques

Data analysis was carried out using **thematic analysis**, following Braun and Clarke's (2006) six-step approach. Interview transcripts and field notes were coded manually to identify recurring patterns, categories, and emergent themes related to conservation ethics, practices, and socio-cultural values. NVivo software was used to organize qualitative data and support coding reliability. Visual data from PRA activities were digitized and used to contextualize and triangulate findings. Observational data were analyzed to detect correspondence between reported practices and actual behaviors in the field.

Emerging themes were classified under broader categories such as "ritual protection of birds," "agro-ecological conservation," "communal norms," and "challenges to traditional knowledge." These themes were then interpreted in light of existing literature to ensure theoretical grounding and empirical relevance.

Ethical Considerations

This research adhered to strict **ethical guidelines** to protect the rights and dignity of participants. Informed consent was obtained from all participants prior to interviews and PRA activities. The purpose of the research was explained in the local language (Marwari or Hindi), and participation was entirely voluntary, with the option to withdraw at any time. Anonymity and confidentiality were maintained by anonymizing data and using pseudonyms where necessary. Ethical clearance was obtained from the researcher's home institution prior to the commencement of fieldwork. Additionally, efforts were made

to ensure that findings would be shared back with participating communities in accessible formats, thereby honoring principles of **reciprocal research engagement** (Smith, 2012).

1.4 Community-Based Conservation Practices

1.4.1 Bird-Friendly Agricultural Practices

Agriculture in Jalore is not only a livelihood strategy but also a key arena for informal conservation. Many local farmers, particularly those from Bishnoi, Rajput, and Jat communities, engage in **bird-friendly agricultural practices** that provide both food and shelter for resident and migratory bird species. Post-harvest gleaning is a crucial phenomenon wherein leftover grains and insects in the fields become a significant food source for birds such as the Indian Roller (*Coracias benghalensis*) and Black Drongo (*Dicrurus macrocercus*) (Rahmani, 2012). Farmers intentionally delay ploughing back the stubble or clearing fields to allow birds to feed, especially during critical migratory periods.

The use of organic manure, rotation of fallow lands, and low pesticide input—practices derived from traditional knowledge—further create a conducive habitat for insectivorous and granivorous birds. Additionally, it was observed that older farmers often discourage the hunting of birds that frequent their fields, considering them harbingers of good fortune and ecological balance. Such practices, while not framed in formal conservation terms, represent a symbiotic interaction between agriculture and biodiversity.

1.4.2 Sacred Groves, Rituals, and Taboos

Spiritual and religious beliefs significantly shape conservation behaviors in Jalore. Sacred groves (*oran* or *devban*)—patches of protected vegetation associated with deities or ancestral spirits—function as de facto conservation zones. These groves harbor old trees, shrubs, and undisturbed soil that support the nesting and foraging needs of various bird species such as the Indian Paradise Flycatcher (*Terpsiphone paradisi*) and Spotted Dove (*Spilopelia chinensis*) (Kothari et al., 1998). Cutting trees, collecting firewood, or hunting within these groves is strictly prohibited due to religious taboos.

Ritualistic practices further strengthen these norms. For example, during certain festivals, women and children place water pots and grain in open fields or near trees as offerings to birds and other wildlife. Taboos surrounding bird nests—especially those built on rooftops or household trees—ensure their protection, as disturbing such nests is believed to bring misfortune. These localized belief systems create a powerful, community-enforced form of ecological regulation that requires neither formal legislation nor external monitoring (Singh & Sharma, 2015).

1.4.3 Water Resource Management and Habitat Support

In an arid district like Jalore, **traditional water management systems** play a pivotal role in supporting avian biodiversity. Community-constructed water bodies such as *talabs*, *johads*, and *beris* are not only lifelines for agricultural and domestic use but also serve as critical habitats for birds. Migratory species such as the Demoiselle Crane (*Grus virgo*) and Painted Stork (*Mycteria leucocephala*) rely on these seasonal water bodies during their journey across the Thar Desert.

These structures are often maintained through community contributions and voluntary labor, reflecting a shared sense of environmental responsibility. Observations during field visits revealed that several communities intentionally leave a portion of water reservoirs undisturbed during peak migratory seasons to avoid scaring birds away. Additionally, small man-made perches, shade trees, and hedgerows are preserved or planted near water sources to support roosting and feeding activities. Such initiatives illustrate how water management, biodiversity conservation, and social cooperation are tightly interwoven in rural ecological practices (Sharma & Meena, 2019).

1.4.4 Role of Women and Elders in Conservation

Women and elders are critical knowledge bearers and active participants in conservation practices across Jalore. Women, particularly those engaged in agriculture and livestock care, maintain traditional seed varieties that enhance agro-biodiversity and bird foraging opportunities. Their daily interaction with the landscape—from collecting fodder to drawing water—provides them with acute observational knowledge of seasonal bird behavior, migratory patterns, and nesting cycles (Berkes, 1999). Many women are responsible for placing water and food for birds, a practice passed down through generations as part of household ritual and moral duty.

Elders, meanwhile, function as custodians of oral ecological knowledge and traditional norms. They often lead community discussions during festivals or disputes related to land use, invoking stories, folk songs, and religious teachings that valorize co-existence with nature. Their authority lends credibility to informal rules such as seasonal bans on tree-cutting or quiet zones around nesting sites. The inclusion of women and elders in everyday conservation highlights the embeddedness of ecological ethics in local social structures and knowledge systems, a dimension often overlooked by top-down conservation frameworks (Pathak, 2002).

1.5 Case Study: The Bishnoi Community

The Bishnoi community, predominantly located in western Rajasthan including parts of Jalore, is internationally recognized for its unique and deeply spiritual environmental ethics. Founded in the 15th century by Guru Jambheshwar (also known as Jambhoji), the Bishnoi faith is based on 29 principles (*bish* meaning twenty and *noi* meaning nine), many of which explicitly promote the protection of flora and fauna. Among these, key tenets include the prohibition of cutting green trees and killing animals, as well as the moral imperative to provide food and water to all living beings (Kothari et al., 1998). This ecocentric worldview is not only religious but also a practical response to living sustainably in the arid and fragile ecosystems of Rajasthan.

Guru Jambheshwar's teachings, compiled in the *Shabadwani*, emphasize harmony between humans and nature, advocating a life of non-violence (*ahimsa*), compassion, and austerity. These teachings are ritually reinforced through communal worship, storytelling, and folk performances. As such, Bishnoi conservation ethics are not episodic but deeply institutionalized across generations, making them one of India's earliest and most sustained models of community-based ecological stewardship (Singh, 2001).Among the Bishnois, bird protection is not merely an incidental aspect of life but a spiritual and ethical responsibility. Community members routinely feed birds with grains and water, especially during dry seasons. Traditional clay water pots (*matkas*) are placed on rooftops and in open fields for birds, a

practice known locally as *chidiya jal seva*. Birds such as the Indian Peafowl (*Pavo cristatus*), Rock Pigeon (*Columba livia*), and House Sparrow (*Passer domesticus*) are especially revered, with their presence considered auspicious.

Nesting birds are never disturbed; in fact, homes and fields with active nests are often symbolically blessed. Field observations and interviews revealed that certain trees known to host bird nests—such as *neem* (*Azadirachta indica*) and *khejri* (*Prosopis cineraria*)—are treated as sacred and protected. Hunting and egg collection are strictly forbidden, and violators may face strong social sanctions or exclusion from community events (Pathak, 2002). These conservation practices are reinforced through religious festivals such as *Guru Jambheshwar Jayanti*, during which environmental pledges are renewed collectively.

The Bishnoi community's success in conservation is rooted in its strong **social cohesion and decentralized governance**. Community elders and religious leaders (locally called *purohits* or *saints*) play a central role in mobilizing action, settling disputes, and transmitting ecological values. These leaders often invoke religious scriptures and historical incidents—such as the **Khejarli Massacre of 1730**, where 363 Bishnois sacrificed their lives to protect sacred trees—to inspire younger generations (Gupta, 2007).

Knowledge transmission occurs through oral traditions, moral stories, songs, and day-to-day socialization. Children learn ecological values informally by participating in household and agricultural tasks, observing their elders, and attending religious gatherings. Women are instrumental in this transmission process, especially through household rituals that involve feeding birds, storing seeds, and maintaining water pots.Community-based organizations, such as **Bishnoi Tiger Force** and local environmental NGOs, have recently emerged as active agents of conservation awareness, campaigning against poaching and environmental degradation. These groups often collaborate with forest departments to monitor bird populations and raise awareness among neighboring non-Bishnoi communities. Such efforts exemplify the scalability and adaptability of the Bishnoi model in modern conservation discourse (Mehta, 2013).

1.6 Challenges and Emerging Threats

Despite the resilience of traditional community-based conservation systems in Jalore, several emerging challenges threaten their continuity and effectiveness. These pressures stem from socio-economic transformations, ecological shifts, and policy-level shortcomings, each affecting the capacity of rural communities—particularly groups like the Bishnois—to sustain their conservation ethos and practices.

One of the most significant threats is the rapid transformation of rural landscapes due to agricultural intensification, urban expansion, and infrastructure development. The proliferation of mechanized farming and borewell irrigation has led to habitat fragmentation and declining food availability for birds. Previously bird-friendly crops are increasingly being replaced by cash crops such as mustard and cotton, which are less conducive to avian foraging and nesting (Gadgil & Guha, 1992). Additionally, the rise of real estate ventures and highway expansion projects have encroached upon sacred groves and seasonal wetlands, disrupting migratory corridors and reducing available nesting grounds.

Land ownership changes also play a role in marginalizing communal decision-making. Younger farmers with commercial priorities often disregard traditional practices like delayed harvesting or maintaining hedgerows. This trend points to a tension between economic aspirations and ecological values in modern rural Rajasthan.

Climate variability, particularly erratic rainfall and rising temperatures, has severely impacted bird habitats in Jalore. Seasonal water bodies like *talabs* and *johads* are drying earlier in the year, affecting both local and migratory bird species such as the Painted Stork (*Mycteria leucocephala*) and Demoiselle Crane (*Grus virgo*) (Sharma & Meena, 2019). Extended dry spells reduce food availability, nesting success, and overall bird population resilience.Moreover, increased competition over scarce water resources between agricultural, domestic, and ecological needs further exacerbates the situation. In interviews, elders expressed concern that birds now arrive later, in fewer numbers, or skip traditional habitats altogether—an observation corroborated by comparative field data over the past decade.

Youth outmigration from rural villages to urban centers for education and employment has led to a noticeable erosion of traditional ecological knowledge (TEK). As younger generations spend less time engaged in agricultural and communal life, they lose daily exposure to the rituals, norms, and responsibilities associated with bird conservation. Field interviews revealed that while elders remain custodians of conservation practices, few youth are actively involved in maintaining water pots, protecting groves, or participating in seasonal rituals.

This cultural discontinuity is compounded by a growing preference for formal education and modern livelihoods, which often prioritize technical knowledge over localized ecological wisdom. Without mechanisms for intergenerational knowledge transfer, practices rooted in oral tradition and experiential learning are at risk of fading.

Despite their effectiveness, **community-based conservation models like those practiced by the Bishnois** receive **limited formal recognition** from government agencies. Current wildlife policies and conservation schemes tend to prioritize protected areas and technocratic interventions, often sidelining informal and culturally embedded conservation efforts (Kothari et al., 2012). For instance, while forest and wildlife departments conduct occasional bird censuses, they rarely consult local communities as collaborators or knowledge partners.

The absence of legal frameworks to recognize sacred groves or community-conserved areas (CCAs) in Rajasthan weakens the institutional support for traditional conservation norms. Moreover, financial support for community initiatives remains scarce, leading to volunteer fatigue and reduced participation. Bureaucratic hurdles also limit the ability of grassroots organizations to access grants or participate in official decision-making processes. This lack of integration not only undermines local morale but also leads to duplication of efforts and fragmented conservation outcomes.

1.7 Discussion

1.7.1 Comparative Analysis with Other Community-Based Models

The conservation practices observed in Jalore—especially among the Bishnoi community—bear significant resemblance to other successful **community-based natural resource management**

(CBNRM) models across India and the Global South. For instance, the sacred groves of the Khasi and Garo tribes in Meghalaya, or the Apatani paddy-fish agroecological systems in Arunachal Pradesh, similarly rely on spiritual beliefs and localized ecological knowledge to preserve biodiversity (Malhotra et al., 2007). Like the Bishnois, these communities integrate conservation into the rhythms of everyday life without explicit dependence on external regulatory frameworks.

However, what sets the Jalore case apart is the **depth of religious codification** in the Bishnoi worldview. Conservation is not merely a cultural preference but a spiritual imperative. This is in contrast to many secular CBNRM initiatives, such as joint forest management (JFM), which are often externally driven and suffer from issues of sustainability and genuine participation (Agrawal & Gibson, 1999). The Jalore model thus offers a compelling example of how **intrinsic motivations**—when rooted in community identity—can yield durable ecological outcomes.

1.7.2 Integrating TEK with Scientific Conservation

One of the most promising pathways for strengthening bird conservation in regions like Jalore lies in integrating Traditional Ecological Knowledge (TEK) with scientific conservation strategies. TEK provides detailed, place-specific insights into avian behavior, migration patterns, and habitat use—often based on generations of observation. When systematically documented and validated, this knowledge can complement ornithological surveys, habitat mapping, and conservation monitoring (Berkes, 1999).

For example, local reports about shifts in the arrival time of migratory birds can be correlated with meteorological data to assess climate impacts. Similarly, traditional water management practices can inform wetland restoration projects. However, meaningful integration requires mutual respect and co-production of knowledge between scientists and local communities, rather than extractive data collection or tokenistic involvement.

The informal conservation mechanisms in Jalore demonstrate impressive potential in fostering low-cost, decentralized biodiversity stewardship. Their strength lies in moral legitimacy, cultural embeddedness, and low dependence on external funding. Because these practices are rooted in daily habits, belief systems, and community norms, they often achieve higher compliance and adaptability than externally imposed regulations (Pathak, 2002).However, informal practices also have structural limitations. They are vulnerable to socio-economic change, generational shifts, and external development pressures. As Section 7 highlighted, youth migration, changing land use, and climate variability increasingly strain traditional systems. Moreover, the lack of formal recognition means that such practices may be overlooked or undermined in regional development planning. Without institutional support, community initiatives risk becoming isolated efforts rather than components of a broader conservation strategy.

The findings of this study underscore the need for policy frameworks that recognize and support community-led conservation. First, there is a strong case for formally acknowledging sacred groves and community-conserved areas (CCAs) as legitimate conservation spaces within state and national biodiversity strategies. This can be done through legal instruments or through participatory mapping and registration processes, as piloted under the Forest Rights Act and the Biological Diversity Act (Kothari et al., 2012).

Second, conservation policies must be flexible enough to accommodate plural knowledge systems. Rather than relying solely on technical prescriptions, policy should encourage co-management models that empower communities to participate in planning, monitoring, and benefit-sharing. Capacity-building programs can help bridge generational gaps, enabling youth to connect traditional wisdom with modern ecological science.

Finally, there is a need for multi-scalar collaboration—between local communities, NGOs, academic institutions, and government bodies—to co-create conservation strategies that are context-sensitive, equitable, and ecologically sound. The Jalore case study offers valuable insights into how conservation can be both culturally resonant and ecologically effective when local communities are seen not just as stakeholders, but as stewards and knowledge partners.

1.8 Conclusion

This study explored the diverse and deeply rooted community-based bird conservation practices in the Jalore district of Rajasthan, with a particular focus on the Bishnoi community. The research revealed that traditional ecological knowledge (TEK), spiritual beliefs, and communal values play a pivotal role in shaping everyday conservation behavior. Practices such as feeding birds, protecting sacred groves, and maintaining water sources are not isolated customs but form part of an integrated cultural-ecological system that sustains avian biodiversity in semi-arid landscapes.

However, these informal conservation systems face growing challenges. Land use change, climate variability, youth migration, and a lack of institutional support are eroding the very foundations of this locally-driven conservation ethos. The study also found that while these practices are resilient and adaptive, they remain undervalued in formal conservation planning and policy frameworks.

1.8.1 Recommendations for Conservation and Policy

To ensure the sustainability and scaling of such community-based conservation models, several strategic recommendations are proposed:

1. **Legal Recognition**: Sacred groves and community-conserved areas should be formally recognized within India's biodiversity governance frameworks.
2. **Co-Management Models**: Foster collaborative governance structures that integrate scientific conservation tools with local knowledge and decision-making processes.
3. **Capacity Building**: Design educational programs that bridge traditional knowledge systems and modern ecological science, particularly targeting rural youth.
4. **Resource Support**: Provide funding, technical assistance, and institutional linkages to community groups for conservation activities, monitoring, and advocacy.

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Appendices

Appendix A: Interview Schedules

A.1. Semi-Structured Interview Questions for Community Members

Section I: General Information

- Name (Optional):
- Age:
- Gender:
- Occupation:
- Village/Community Name:

Section II: Perceptions and Practices

1. What types of birds are commonly seen in your village or fields?
2. Are there any birds that are considered sacred or culturally significant?
3. What practices do you or your community follow to protect birds?
4. Have these practices changed over time? If yes, how and why?
5. Are there specific rituals or festivals associated with birds?

6. How do elders or religious figures influence bird conservation?
7. What role do women or youth play in protecting birds?

Section III: Environmental Knowledge and Change 8. Have you noticed any changes in bird populations or migratory patterns in recent years? 9. How do local farming or water practices affect birds? 10. Do you face any challenges in continuing traditional conservation practices? 11. Are government or NGO efforts present in your area? If yes, how helpful have they been?

Appendix B: Species List of Birds Documented in Jalore District

Common Name	**Scientific Name**	**Status (Resident/Migratory)**	**Notable Observations**
Indian Peafowl	*Pavo cristatus*	Resident	Sacred; protected by Bishnoi rituals
House Sparrow	*Passer domesticus*	Resident	Nesting in mud huts and walls
Painted Stork	*Mycteria leucocephala*	Migratory	Seen near seasonal water bodies
Black Drongo	*Dicrurus macrocercus*	Resident	Considered a crop-protecting species
Demoiselle Crane	*Grus virgo*	Migratory	Arrives in large flocks in winter
Indian Roller	*Coracias benghalensis*	Resident	Subject of local folktales
Eurasian Collared Dove	*Streptopelia decaocto*	Resident	Common in agricultural fields
Red-wattled Lapwing	*Vanellus indicus*	Resident	Nests on fallow ground; locally revered
Common Myna	*Acridotheres tristis*	Resident	Often observed near human habitation
Green Bee-eater	*Merops orientalis*	Resident	Insect control; seen in open areas

Note: This list is based on field observations and community reports collected between January and April 2025. Seasonal variation may lead to additional sightings.