Environment, Resource and Ecology Journal (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/erej.2025.090207
ISSN 2616-3756 Vol. 9 Num. 2

Reconstructing the Human-Bird Relationship: Spatial Practices and Collaborative Governance of Urban Birdwatching Activities in Hangzhou City

Wanyue Peng

Hangzhou Yungu School, No. 269 Jingda Road, Sandun Town, Xihu District, Hangzhou, China
Che1see@outlook.com

Keywords: Urban Birdwatching; Citizen Science; Spatial Practice; Collaborative Governance; Multi-Species Relationship

Abstract: With the widespread application of the concept "citizen science" in urban ecological governance, birdwatching activities, as a typical ecological practice based on public participation, is reshaping the way humans interact with nature. In this paper, the author takes Hangzhou Xixi National Wetland Park and Hangzhou Botanical Garden as field sites, and adopts anthropological methods such as participant observation and semi-structured interviews in order to explore spatial practices, social interactions, and collaborative governance mechanisms in urban birdwatching activities. Researches have shown that birdwatching behaviors have undergone a transformation from "emotional resonance" to "symbolic possession" in the process of mediation and socialization, revealing the reproduction of nature and the reconstruction of social relations. Besides, different participants (such as experienced birdwatchers, rangers, members of Birdwatching Society, and ordinary tourists) engage in a game around the use and order of public spaces, exhibiting characteristics of spatial theatricalization and body politics. Furthermore, urban birdwatching practices have formed a collaborative governance network involving multiple participants, where there is passive intervention from state powers, authority competition among civil organizations, and conflicts between local knowledge and scientific knowledge. Through micro-ethnographic analysis, in this paper, it is pointed out that urban birdwatching is not only an ecological behavior, but also a social practice that reflects social structure, power relations, and the logic of multi-species coexistence. New empirical and theoretical insights are provided for understanding contemporary representations of urban ecological governance and human-nature relationships.

1. Introduction

With the development of the concept "citizen science", urban birdwatching, a scientific research model based on public participation, has been applied widely in ecological and environmental science research. As a citizen science, urban birdwatching activities not only provide scientists with a wealth of data sources, but also enable ordinary people to participate more actively in

environmental awareness and protection, thereby enhancing their ecological awareness[1]. With the acceleration of urbanization, the application of citizen science in urban ecology has become increasingly prominent, especially in the fields of natural observation, ecological monitoring, and species protection. Public participation has become an important path for understanding and improving urban ecosystems[2].

It is just against this backdrop that urban birdwatching activities have experienced rapid development. As a socio-ecological practice that integrates observation, recording, and sharing, birdwatching activities transform ordinary citizens into key nodes in the ecological monitoring network through data platforms such as eBird and iNaturalist[3-4]. This process not only facilitates the interaction between science and the public, but also gives rise to new spatial relationships and social interaction mechanisms in urban green spaces. From the perspective of ecological anthropology, birdwatching not only provides a window for human-nature interaction, but also is a mediatory practice. The spatial use patterns, emotional involvement, and knowledge production mechanisms involved in it have gradually become the focus of attention for urban geography and socio-ecological researchers[5-7].

However, current researches on urban birdwatching activities show two opposing tendencies: on the one hand, some studies emphasize the ecological value and environmental education function of urban birdwatching activities, viewing birdwatchers as "guardians" of urban biodiversity [8-9]; on the other hand, there are also critical voices pointing out that high-intensity human activities themselves may disrupt bird habitats, especially during the breeding season or when rare bird species appear, and the aggregation effect may bring ecological pressure[10-11]. These two perspectives, to some extent, overlook the more complex spatial politics and crowd relationships in urban birdwatching practices: within the interactions between birdwatchers, birds, and urban spaces, there exists a constantly collaborative and reconstructed governance logic and social order.

Existing researches have preliminarily explored the socio-ecological impacts of urban birdwatching activities, but have not yet systematically analyzed the comprehensive significance of birdwatching practices in terms of spatial production, social interaction, and collaborative governance. On the one hand, urban space researches on birdwatching activities still mainly focuses on their ecological value assessment and tourism potential development[12-13]; on the other hand, researches on citizen science have not yet fully paid attention to the inherent social conflicts, power structures, and technological regulation mechanisms involved[14]. Especially in the Chinese context, ecological activities in urban public spaces often involve complex collaborations among multiple participants, such as municipal administrators, scientific research institutions, nature enthusiasts, and ordinary tourists. However, how these collaboration processes affect spatial governance and ecological cognition remains to be further explored.

Based on this, this paper will focus on the following research issues:

(1) How are urban birdwatching activities in Hangzhou developed in spatial practices? What are the characteristics of the behavioral patterns, interaction mechanisms, and spatial organizational structures involved?

(2) How do different participants (such as bird photographers, walkers, volunteers, and municipal staff) collaborate in access rights and behavioral norms in birdwatching practices?

(3) In what sense do urban birdwatching activities manifest a collaborative governance mechanism? How do the technological, institutional, and cultural logics involved operate?

To answer the aforementioned questions, in this paper, the author utilizes Hangzhou Botanical Garden and Xixi National Wetland Park as main field sites and adopts a multi-method anthropological research strategy, including participant observation, semi-structured interviews, and other methods, aiming to understand the broader changes in the human-nature relationship reflected by urban birdwatching practices from the perspective of social space production and collaborative

governance.

In this paper, firstly, the author attempts to view birdwatching practices as an "ecological micro-behavior" with spatial production characteristics, reflecting a macro-level governance logic through micro-level interactions; secondly, it is unique that Hangzhou is selected as the case study site - as a city where nature and culture are highly integrated, Hangzhou boasts a relatively mature ecological governance system and highly active natural observation groups, making it an ideal sample for analyzing the interactive relationship between citizen participation in scientific researches and urban governance. It is hoped that the study presented in this paper will provide new theoretical and empirical perspectives for understanding the nature-society-technology-involved ecological practices in contemporary cities that share similar characteristics with Hangzhou.

2. Methodology

This study focuses on Hangzhou City, Zhejiang Province, China. Hangzhou, located in the southeast of China, is renowned for its "landscape interdependence" and profound cultural heritage. The unique geographical and ecological patterns have enabled the city to retain abundant urban natural spaces under the rapid urbanization background[15].In addition to the widely known West Lake, Hangzhou also boasts numerous urban green spaces that serve both ecological functions and recreational values, among which Xixi National Wetland Park and Hangzhou Botanical Garden are particularly typical. They not only complement each other in terms of ecological types, but also exhibit distinct differences in the composition of birdwatching groups, activity patterns, and spatial utilization, thus providing a comparative case study for exploring the spatial practices and social interactions of urban birdwatching.

Xixi National Wetland Park is located at the junction of Xihu District and Yuhang District in Hangzhou City, covering a total area of approximately 11.5 square kilometers. About 70% of this area is constituted by water bodies, including river ports, ponds, lakes, and marshes. As China's first national wetland park that integrates urban wetlands, agricultural wetlands, and cultural wetlands, Xixi National Wetland Park has been rated as a national 5A-level tourist attraction[16]. Its ecosystem is diverse, with particularly abundant waterbird resources. Despite the large number of tourists, they are mainly concentrated in the commercialized areas of the wetland. In contrast, the birdwatching tower on the lotus beach, located deep within the wetland, has smaller daily foot traffic due to limited information dissemination and relatively hidden transportation routes, forming birdwatching groups consisting of stable members. These groups are primarily composed of local experienced elderly birdwatchers with regular daily activities. Their interests are focused on specific common bird species and occasional "star birds". They have a deep emotional attachment to the area and long-term local experience, exhibiting high group cohesion and identity recognition.

As shown in Figure 1, Hangzhou Botanical Garden, located in Taoyuanling, Xihu District, covers an area of 284.64 hectares. Established in 1956, it is a comprehensive botanical garden integrating scientific research, popular science education, and recreation. It features nine exhibition zones, including plant classification, economic plants, bamboo, ornamental plants, trees, and landscape gardens (TripAdvisor, n.d.). The diverse vegetation types within the park provide a rich habitat and foraging environment for migratory and resident birds. Unlike the situation in Xixi National Wetland Park, birdwatching activities in Hangzhou Botanical Garden are notably characterized by "star bird events" - once a rare or protected bird species is discovered locally, the information will spread rapidly via WeChat groups, photography circles, and birdwatching groups in a short period of time, triggering a large number of enthusiasts with telephoto cameras to gather and take photos. Such hotspots are often temporary, influenced by the ripening period of fruit trees, breeding season, or migration routes and other factors, and thus have a limited duration. The

birdwatching groups at the botanical garden are more diverse, consisting of experienced and well-equipped enthusiasts, as well as novice watchers, family visitors with children, and occasional visitors from other places. The gender ratio is approximately eight to one, with participants ranging from children to the elderly. Due to significant differences in activity purposes and experience levels, the interactive atmosphere in this field is more fluid and contingent, often featuring instantaneous gatherings and dispersals, as well as diverse communication modes.

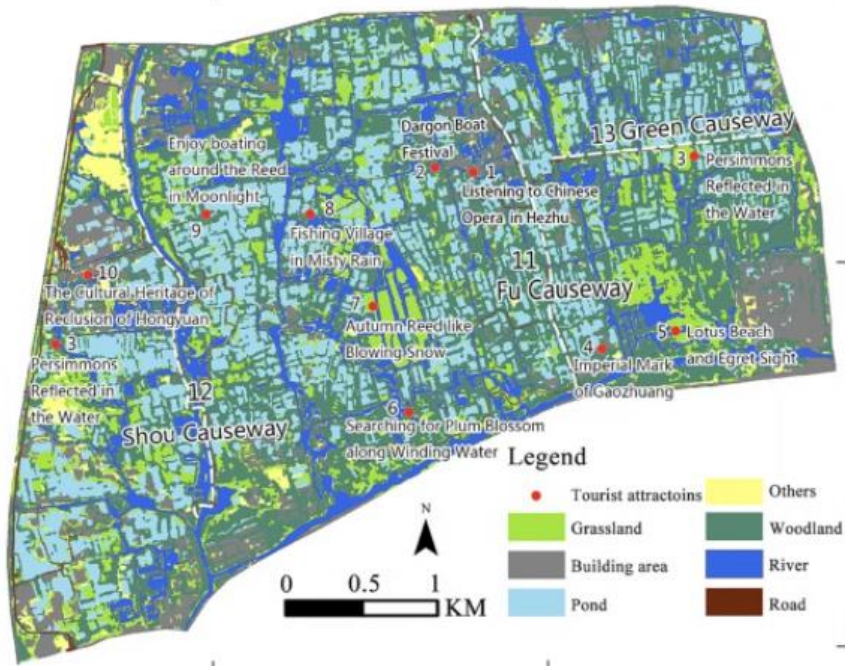

Fig.1 Map of Field Site - Hangzhou Botanical Garden

In this paper, the author employs a multi-method anthropological approach for data collection and analysis for these two field sites. Firstly, the core method is participant observation. Participant observation is a data collection method in qualitative research, where researchers directly participate in the daily activities of target groups to observe and understand their behaviors, interactions, and meanings in a natural setting[17]. This method emphasizes long-term immersion and establishes a balanced relationship of "both participation and observation" with the research subjects, thereby capturing subtle social practices that are difficult to obtain through dialogue or questionnaires. The researcher, as a young birdwatching enthusiast, immersed in the scene, engaging in natural communication and long-term coexistence with various types of participants during the photographic activities at the botanical garden and inside the birdwatching tower at Xixi National Wetland Park, observing their behavioral patterns, interaction processes, conflict scenarios, and non-verbal elements (such as camera tripod density, changes in positioning, and field atmosphere). The fieldwork was carried out in stages from May to August 2024: the first stage involved multiple long-duration observations from May to June, including continuous on-site presence from early morning to afternoon at the botanical garden; the second stage, in August, the researcher focused on supplementing observations over the daily activities of birdwatching groups at Xixi National Wetland Park.

Semi-structured interviews combine the thematic guidance of structured interviews with the flexibility in follow-up questions and further exploration during the interview process. This approach guides the interviewee to make narrations without losing focus on the research direction, and is often described as "a purposeful dialogue"[18]. The semi-structured in-depth interviews aim to cover multiple stakeholders and participating groups. There are three interviewees with whom the

interview has been completed: "Lao Jiang from Zhejiang University", a ranger of the botanical garden, and "A Piece of Cloud" - a veteran birdwatcher from Xixi National Wetland Park. It has been planned to interview some members of the Birdwatching Society, such as "Mr. Dong Si" and "Ms. Xiaoli", as well as a staff member from a government department. Furthermore, the method of in-depth interviews was employed, focusing on participation motivation, field experience, conflict and collaboration mechanisms and other topics, supplemented by text analysis of social media and online platforms (such as Rednote and WeChat groups) to trace the dissemination path and discussion dynamics of event information. The information about the interviewees is presented in Table 1.

Table 1 Information about the Interviewees

Interviewee	Identity	Field/site	Gender	Age	Participation characteristics and experience
Lao Jiang	Veteran birdwatcher and photography enthusiast	Hangzhou Botanical Garden and Xixi National Wetland Park	Male	About 60 years old	With over 20 years of birdwatching experience, familiar with the main birdwatching spots in Hangzhou, and has participated in the early construction of birdwatching groups
Ranger	A staff from the botanical garden management	Hangzhou Botanical Garden	Male	About 40 years old	Responsible for daily patrols and order maintenance, conducting long-term observation over public behaviors and implementing management interventions
A Piece of Cloud	Long-term birdwatcher at Xixi National Wetland Park	Xixi National Wetland Park	Male	About 50 years old	Stable birdwatching group member of the wetland, with rich local experience
Mr. Dong Si	Vice Chairman of the Birdwatching Society, and initiator of the "Mandarin Duck Protection Team"	West Lake and Xixi National Wetland Park	Male	About 50 years old	Organizing public education, environmental protection publicity, and media cooperation
Ms. Xiaoli	Member of the Birdwatching Society	West Lake	Female	About 40 years old	Active in the birdwatching group, participating in volunteer activities and promotion
Government staff (anonymity)	Personnel from Hangzhou Forestry and Water Resources Bureau	Hangzhou municipal level	Male	30-50 years old	Responsible for ecological-management-related affairs

Finally, thematic analysis is employed for data analysis[19]. Firstly, the audio recordings and field notes were transcribed verbatim and thoroughly read to gain a comprehensive understanding of the data; and then, open coding was conducted to extract keywords or phrases that could collectively reflect the interviewees' viewpoints and behavioral characteristics. The coding results were categorized and integrated to form several themes, and cross-validation and correction were conducted across different data sources. The analysis process emphasizes reflectivity and multi-evidence support, supplemented by triangulation of data and anonymization processing, ensuring the effectiveness and ethicality of the research.

3. Research results

3.1 Ecological Impacts: The Dual Role of Birdwatching Activities

Birdwatching activities in Hangzhou are undergoing a profound transformation, with the core being the disintegration of social norms that sustain interactions between humans and birds. The narratives of multiple interviewees together paint a clear trajectory from "coexistence" to "disturbance".

In the past, a highly self-disciplined birdwatching group composed of experienced enthusiasts was the key to maintaining the balance. Lao Jiang, one of the interviewees, described a set of effective internal rules in detail: "Those who arrived early must sit in lower seats in the front row, so that those who arrived later had the opportunity to take photos. During the peak hours, the Fanggui Pavilion in Maojiabu can accommodate more than 100 people, with five or six rows of seats. But everyone follows the rules. If someone speaks too loudly, someone will remind him." This system of civil self-discipline, based on morality and mutual supervision, effectively constrains the behavior of birdwatching group members, resulting in the establishment of a benign relationship between humans and birds. Lao Jiang recalled, "We used to gather together frequently for drinks when we were taking photos of kingfishers in Maojiabu. On Saturdays and Sundays, we each prepared delicious dishes at home and brought them over for a good drink at noon... The birds were not afraid of people, and they would perch on the camera one by one at three or four in the afternoon." This scene of "birds not afraid of humans" is a clear demonstration of the symbiotic state facilitated by low-intensity and predictable human activities.

Fig.2 The Birdwatching Crowd

However, the expansion of birdwatching groups and the loss of rules have led to "disorder" and "disturbance" in the present (as shown in Figure 2). Lao Jiang pointed out sadly: "In recent years, there have been more and more people participating in the birdwatching activities, and conflicts between bird photographers have also increased. Quarrels and physical violence often occur... There are always some people who do not follow the rules and think they are always the right ones." Such disordered state directly affects birds. The botanical garden ranger observed that when the "star bird" appeared, "equipment and crowds will obstructed the road traffic," which forced the management to "dispatch 4-5 people during peak hours" to maintain order. A more extreme intervention occurred in the Camellia Garden of the botanical garden, where "the embroidered eyed

bird was bathing in a tree hole; after a few days during which there were too many birdwatchers and photographers, the security guard sealed the tree hole with cement". This behavior symbolizes the complete collapse of the original interaction mode - when self-discipline fails, the administrative system can only respond through physical isolation.

The core driving force behind this transformation is the disruption of the birdwatching group structure by technological media. The ranger admitted his way of obtaining bird information: "they sent it to Rednote and I took a screenshot of it". Lao Jiang pointed out more directly: "The chaos of bird photography lies in the media promotion. Bird photography was originally limited to birdwatching enthusiasts, but the media promoted it. Some people even pay special attention to equipment and constantly update it. Of course, they have money, and they don't care about this." It was social media that broke the boundaries of traditional niche of birdwatching groups, and the groups' pursuit has shifted from "truly loving birds", e.g., represented by Lao Jiang, to "pursuing national first-class and second-class protected animals, taking photos of bird species from other places, and forming small symbolic forms for collection". It is this shift from "relational interaction" to "symbolic possession" that fundamentally undermines the foundation for building trust between humans and birds.

However, organized protective actions also have positive impacts. The "Mandarin Duck Protection Team" led by Mr. Dong Si, Vice Chairman of the Birdwatching Society, has effectively changed public behaviors through continuous promotion and persuasion. Mr. Dong Si said, "After our publicity, especially the media's strong promotion, many Hangzhou citizens voluntarily joined in and told others that these mandarin ducks should not be fed, because they are national second-class protected animals, and feeding them will cause them to lose their ability to survive in the wild... Now, local citizens have rarely participated in feeding them, let alone harming them." Such bottom-up scientific practices by citizens demonstrate efforts to rebuild positive interactions under new social conditions.

3.2 Spatial Politics: Competition and Conflict in Public Spaces

The birdwatching craze has transformed urban parks into the forefront of value collision and space competition, with profound differences among different groups in how to properly use public spaces.

Fig.3 Management of Bird Photographic Order

The most prominent contradiction lies in space occupation and disorder. As a result, the job responsibilities of rangers have been expanded to the management of the bird photographic order,

with the primary task of clearing roads obstructed by equipment and crowds (as shown in Figure 3). This demonstrates the encroachment of birdwatching practices on the original functions of public spaces.

Deeper conflicts stem from intergenerational and value differences. The ranger gave a typical example, "An old bird photographer was smoking... the environmental activists argued with him." Mr. Dong Si, Vice Chairman of the Birdwatching Society, interpreted this type of conflict as a "generation gap". He analyzed, "For the older, his eyes cannot see the bird clearly and his ears cannot hear clearly. He likes taking the photo closer... Perhaps the younger ones have a particularly strong sense of protection and may feel his smoking has a significant impact on the bird." On the one hand, the older "enjoys himself" based on his physical habits; on the other hand, the young ones adhere to modern environmental ethics and have "protective awareness". Both sides have completely different understandings of "correct" behavior.

Furthermore, it seems that the competition symbolizing capital also occurs. Lao Jiang keenly observed the changes in the general mood of bird photography, pointing out that many people now pursue "national first-class and second-class protected animals, take photos of bird species from other places, and form small symbolic forms for collection". The pursuit of rare bird species (cultural capital) and expensive equipment (economic capital) has transformed birdwatching spaces into an invisible arena.

Under such a background, the Birdwatching Society attempts to play the role of a rule advocator and conflict mediator. Mr. Dong Si explained their strategy: "Guide and communicate with them correctly, rather than blaming them... Communicating with them in a respectful way is easier to resolve conflicts." However, this role and the rules it advocates have not gained recognition from all groups. Lao Jiang showed great distrust towards the Birdwatching Society. When he mentioned a police incident, he angrily said, "Someone said it was reported by a member of the Birdwatching Society the next day. Do you think this is right? He took photos himself; and then he reported that someone else did it." This reveals the legitimacy gap between the Birdwatching Society as "rule advocator" and some traditional birdwatchers. The dilemma of governance lies in three aspects: the role of state power (rangers) is passive, the authority of professional organizations (the Birdwatching Society) is insufficient, and civil self-discipline has already failed.

3.3 Collaborative Governance: Collaboration and Interaction among Multiple Participants

In the face of aforementioned conflicts, a dynamic governance network involving multiple participants is being formed, but it is far from perfect.

The governance of state power is reflected in passive and ambiguous intervention. The ranger is clearly aware of the limitations of his knowledge: "I don't really understand birds," and the reason for their focus on birds is just that "they entrusted us to maintain order this year because they would take photos of the birds, and thus we understand the situation passively." Their governance tools are extremely limited. From the persuasion of "suggesting him to smoke in a deserted place" to the ultimate means of "having to go to the police station to deal with it" when the persuasion was ineffective, lacking intermediate and professional governance techniques.

The governance practices of the Birdwatching Society are more proactive and strategic. Mr. Dong Si and his "Mandarin Duck Protection Team" build their influence through cooperation with authorities (e.g., "commissioned by Hangzhou Forestry and Water Resources Bureau to conduct bird testing at West Lake") and media promotion (e.g., "all media basically use the video under my pseudonym"). Their core work is public education. For example, they persuade feeders that "feeding them will cause them to lose their ability to survive in the wild", and successfully making "Hangzhou citizens... rarely participate in feeding". Such efforts to shape public environmental

awareness represent a more refined direction of governance.

However, the Birdwatching Society also faces challenges in sustainable development. Mr. Dong Si candidly stated, "The Birdwatching Society has now reached a bottleneck stage of development. Due to better social conditions, there are not many activities organized. The attraction of the Birdwatching Society is decreasing." Besides, macro-level development plans sometimes go beyond micro-level ecological concerns. When discussing the renovation of both South Lake and North Lake, Mr. Dong Si showed a pragmatic understanding: "The government department has to have a comprehensive consideration... For example, they must take into account the livelihood of the people and the economy of this place. Therefore, if they only take into account the ecology, this society will not develop. And thus GDP cannot be boosted." This reveals the limitations of civil organizations in the face of strong structural forces.

4. Discussion

4.1 The Disenchantment and Re-enchantment of Nature: Technological Media, Alienation, and the Myth of "Pure Nature"

This case study deeply questions the myth of stillness and "pure nature". The intimacy that Lao Jiang cherished was rooted in a stable "moral birdwatching group" based on local knowledge. This discipline ensures the predictability of human behaviors, enabling birds to view human devices as a harmless part of the environment and establish a valuable "symbiotic" relationship.

However, the information flow driven by social media has disrupted this local balance. When the pursuit of birdwatchers shifts from "emotional resonance" to "symbolic possession", the relationship between humans and birds undergoes a profound alienation. As the result of alienation, birds have transformed from localized living "neighbors" to symbols consumed in the global information flow. The extreme intervention of the security guard of the botanical garden by sealing tree holes with cement is not protecting a "pure nature", but responding to another uncontrolled human consumption with a rigid controlling method to maintain order. In Hangzhou, nature (e.g., birds) always has a co-production relationship with human society. The key is not whether humans have "interfered" with pure nature, but what kind of "society-nature relationship" we have produced.

This embodies what Ulrich Beck called "reflective modernity", which means that while technology and media are expanding[20], humans are constantly reconstructing their relationship with nature. The mediated natural experiences have become a part of postmodern consumption[21], and birdwatching behaviors have been repackaged as "practices of visual consumption"[22], revealing the symbolic economic logic behind ecological behaviors. From this, it can be seen that when nature is reproduced by technologies as images and information flows, "re-enchantment" is not a return to the original nature, but an ecological imagination that has been reassigned by society and culture.

4.2 Theatricalization of Space and Body Politics: Capital and Discipline in Green Spaces

Birdwatching activities are reshaping urban green spaces into a politically vibrant "theater". Firstly, the appearance of star birds will instantly become "theatrical", sacrificing the public access function of green spaces and turning them into a performance-oriented "stage" centered on birds.

In this theater, capitals in different forms compete fiercely. Lao Jiang keenly observed the role of economic capital, and the "list-style possession" marked the shift of cultural capital from "emotional resonance" based on long-term experience to standardized symbolic accumulation, which echoes Bourdieu's theory of the mutual transformation of capital forms[23].

The most direct manifestation of the conflict is the "body politics"[24]. The case of "the older

smoking bird photographer" provided by the ranger is a collision of different "body habits" in a small space. Mr. Dong Si attributed such conflicts to a "generation gap", and his analysis revealed how age, sensory ability, and environmental ethics jointly shape the spatial practice of the body. From the "persuasion" of the ranger to the national violence summoned by the ultimate resort to "reporting to the police", a vivid scene of how micro power disciplines and isolates the body is presented.

Such "theatricalization" of spatial practices echoes Lefebvre's theory of "spatial production"[25], where public space is not a neutral container, but a product of social relations. The order, conflict, and discipline of birdwatching fields reflect the social construction of green spaces. At the same time, the behavioral patterns of individual bodies are subject to power relations and social norms, reflecting the daily operation of Foucault's "power-body" mechanism[24]. This perspective enables us to understand birdwatching scenes as a reproduction process of social structure at the micro-level bodies, rather than just a manifestation of individual hobbies.

4.3 Towards Multi-Species Governance: Fragmentation, Authority Competition, and the Construction of a Common World

The case taking place in Hangzhou demonstrates a graph of "fragmented governance". In terms of the governance techniques of the authorities, there exist both lagging behind in knowledge and lacking in tools. In contrast, the governance techniques of the Birdwatching Society are more sophisticated, aiming to shape a self-disciplined "environmental citizen" through scientific discourse and media narratives.

However, the authority of such governance techniques is being challenged. Lao Jiang's fierce accusations against the "reporting" behavior of the Birdwatching Society has revealed a profound "authority competition" between scientific environmentalism and local practical knowledge. There occurs a core anthropological issue: how should we build a "common world" with living things beyond humanity? The ethnographic depiction of this research indicates that the rules of this "common world" cannot be established solely by top-down administrative orders or a single scientific discourse, but must be generated through a difficult and continuous collaboration process that accommodates the state power, the knowledge of organizations, the wisdom of the people, and even the "initiative" of birds themselves, ultimately forming a fragile yet resilient "multi-species hybrid" that is always in a state of generation.

This governance pattern can be linked to the reflection on the "common world" in multi-species ethnography[26]. The interaction between humans and non-human species (birds) is no longer a one-way control, but a form of "symbiotic governance"[27], emphasizing the reconstruction of an ethical order of interdependence in asymmetric relationships. Such "fragmented governance" also reflects the hybrid nature of the "actor network" proposed by Latour[28], where people, things, and technology jointly form an active collaborative entity in ecological governance. From this perspective, the practice of birdwatching in Hangzhou not only reveals the institutional logic of governance, but also demonstrates how humans redefine their moral position in a multi-species world.

5. Conclusion

Through in-depth ethnographic depiction of birdwatching activities in Hangzhou, this research reveals the complexity of contemporary governance of urban public spaces in China. The research has shown that the tension in the relationship between humans and birds is essentially an ecological projection of social imbalance. When the self-discipline system based on local knowledge fails under the impact of globalization and technological media, and a new and widely accepted rule

system has not yet been established, ecological conflicts become a concrete expression of social contradictions.

The contribution of the study is to elevate birdwatching activities from an ecological issue to a core anthropological question about modern experiences. It is intertwined with the reconstruction of social relations through technological media, the transformation game of different forms of capitals, and the collision of diverse governance logics. The future lies in building a collaborative framework that can accommodate diverse knowledge systems (e.g., scientific, local, and administrative systems), seeking a creative balance between state power, organizational knowledge, and local wisdom. The construction of ecological cities is not only a matter of technology and management, but also a profound social and cultural process. The core lies in whether a new social consensus on how to coexist with nature can be cultivated in rapid change.

References

[1] Bhattacharjee, Y. (2005). Citizen scientists supplement work of Cornell researchers. Science, 308(5727), 1402–1403.

[2] Bonney, R., Cooper, C. B., Dickinson, J., Kelling, S., Phillips, T., Rosenberg, K. V., & Shirk, J. (2009). Citizen science: a developing tool for expanding science knowledge and scientific literacy. BioScience, 59(11), 977-984.

[3] Silvertown, J. (2009). A new dawn for citizen science. Trends in ecology & evolution, 24(9), 467-471.

[4] Toomey, A. H., & Domroese, M. C. (2013). Can citizen science lead to positive conservation attitudes and behaviors?. Human Ecology Review, 50-62.

[5] Wilbert, C., & Philo, C. (Eds.). (2000). Animal spaces, beastly places: New geographies of human-animal relations. Routledge.

[6] Whatmore, S. (2006). Materialist returns: practising cultural geography in and for a more-than-human world. Cultural geographies, 13(4), 600-609.

[7] Lorimer, J. (2007). Nonhuman charisma. Environment and planning D: society and space, 25(5), 911-932.

[8] Cooper, C. B., Dickinson, J., Phillips, T., & Bonney, R. (2007). Citizen science as a tool for conservation in residential ecosystems. Ecology and society, 12(2).

[9] Bela, G., Peltola, T., Young, J. C., Balázs, B., Arpin, I., Pataki, G., ... & Bonn, A. (2016). Learning and the transformative potential of citizen science. Conservation Biology, 30(5), 990-999.

[10] Steven, R., Pickering, C., & Castley, J. G. (2011). A review of the impacts of nature based recreation on birds. Journal of environmental management, 92(10), 2287-2294.

[11] Newsome, T. M., Dellinger, J. A., Pavey, C. R., Ripple, W. J., Shores, C. R., Wirsing, A. J., & Dickman, C. R. (2015). The ecological effects of providing resource subsidies to predators. Global Ecology and Biogeography, 24(1), 1-11.

[12] Conrad, C. C., & Hilchey, K. G. (2011). A review of citizen science and community-based environmental monitoring: issues and opportunities. Environmental monitoring and assessment, 176(1), 273-291.

[13] Miller, J. R., & Hobbs, R. J. (2002). Conservation where people live and work. Conservation biology, 16(2), 330-337.

[14] Haklay, M. (2013). Neogeography and the delusion of democratisation. Environment and Planning A, 45(1), 55-69.

[15] Hangzhou Municipal People's Government. (2023, June 9). Approval of the Master Plan for Hangzhou Xixi National Wetland Park (2021–2035) [Government Approval]. Hangzhou News Network. https://hznews.hangzhou. com. cn/xinzheng/tongzhi/content/2023-06/09/content_8552788.htm

[16] Wikipedia. (2025, April). Xixi National Wetland Park. Retrieved from https://zh.wikipedia.org/wiki/%E8%A5%BF%E6%BA%AA%E6%BF%95%E5%9C%B0

[17] Salmons, J. (2023, May 1). Participant Observation — Sage Research Methods Community. SAGE. Retrieved from https://researchmethodscommunity.sagepub.com/blog/131647

[18] Jamshed S. (2014). Qualitative research method-interviewing and observation. Journal of basic and clinical pharmacy, 5(4), 87–88.

[19] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative research in psychology, 3(2), 77-101.

[20] Beck, U. (1992). Risk society: Towards a new modernity. Sage.

[21] Urry, J. (1995). Consuming places. Routledge.

[22] Larsen, J. (2008). Practices and flows of digital photography: An ethnographic framework. Mobilities, 3(1), 141–

160.
[23] Bourdieu, P. (2018). The forms of capital. In The sociology of economic life (pp. 78-92). Routledge.
[24] Foucault, M. (2012). Discipline and punish: The birth of the prison. Vintage.
[25] Lefebvre, H. (1991). The production of space. Blackwell.
[26] Kirksey, S. E., & Helmreich, S. (2010). The emergence of multispecies ethnography. Cultural Anthropology, 25(4), 545–576.
[27] Haraway, D. (2016). Staying with the trouble: Making kin in the Chthulucene. Duke University Press.
[28] Latour, B. (2004). Politics of nature: How to bring the sciences into democracy. Harvard University Press.