

Environmental attitudes of stakeholders and their perceptions regarding protected area-community conflicts: A case study in China

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ABSTRACT

Large numbers of people living in and around protected areas are highly dependent on the natural resources. However, simply excluding them from the area management has always inevitably resulted in conflicts. We conducted a case study of the Protected Area of Jinyun Mountain (PJM) in China to evaluate social context variables, environmental attitudes, and perceptions regarding protected area-community conflicts. Data were collected through questionnaire surveys administered to four stakeholder groups (i.e. local farmers, government staff, business persons, and tourists). A total of 112 questionnaires were completed in December 2008, after the Sichuan Earthquake. The questionnaire consisted of three parts, social context (gender, race, age, income, and education level), protected area-community conflicts, and environmental attitudes. The New Ecological Paradigm (NEP) scores, which were employed to evaluate environmental attitudes, differed significantly among the stakeholder groups ($P < 0.01$). Specifically, government staff reported the highest and business persons did the lowest. Among the five items evaluated, anti-exemptionalism received the lowest score, while nature's balance did the highest. Evaluation of the protected area-community relationship indicated that harmony and conflict both exist in the PJM, but have different forms among different stakeholders, and seem to be opposite between government staff and local farmers. Among the indexes, tourism primarily contributed to the harmonious aspect, while collection of NTFPs did to the conflicting one. Conflict scores were positively related to age and negatively related to education level. Respondents with higher NEP scores were more partial to the park management. Besides, the respondents with higher annual incomes tended to support the policy of harmonizing the relationship and lessening the harm of local communities to the area. To promote proenvironmental attitudes and alleviate the protected area-community conflicts, we recommend improving environmental education, establishing community co-management, and launching substitute sources of cash for traditional cultivation.

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1. Introduction

Establishment and expansion of protected areas is considered to be a primary strategy to counteract the extreme declines in biodiversity. However, there are often large numbers of people living in and adjacent to the areas, and being highly dependent on the natural resources in the areas for food, fuel wood (An et al., 2002; Pote et al., 2006), medicinal herbs (Dzerefos and Witkowski, 2001), honey, and other products (Fabricius and Burger, 1997). In some aspects, it seems that biodiversity conservation and the development of local communities are kind of contrary (Maikhuri et al., 2000; Oltremari and Jackson, 2006).

Ignoring local people's interests and excluding them from the planning, management, and decision making for the protected areas have been found to be the main source of conflicts between local people and the areas (Lewis, 1996; Nepal, 2002). Traditional slash-and-burn, which is still used as the primary cultivation technique in some regions of South Asia and Africa (Peters, 1998; Yang and Zhang, 2003; Yu, 2005), grazing (Cooper et al., 2005), and hunting (Steinmetz et al., 2006; Young et al., 2005) have had negative impacts on species abundance, soil physical variables, and forest resources. However, local residents have evolved with their surrounding environment over several centuries and retained traditional ecological knowledge and activities facilitating biodiversity conservation (Berkes et al., 2000). This kind of knowledge, especially as it relates to resource use, can complement modern conservation systems and aid biological research, while supporting a more equitable and culturally sensitive method of management (Drew, 2005; Gadgil et al., 1993).

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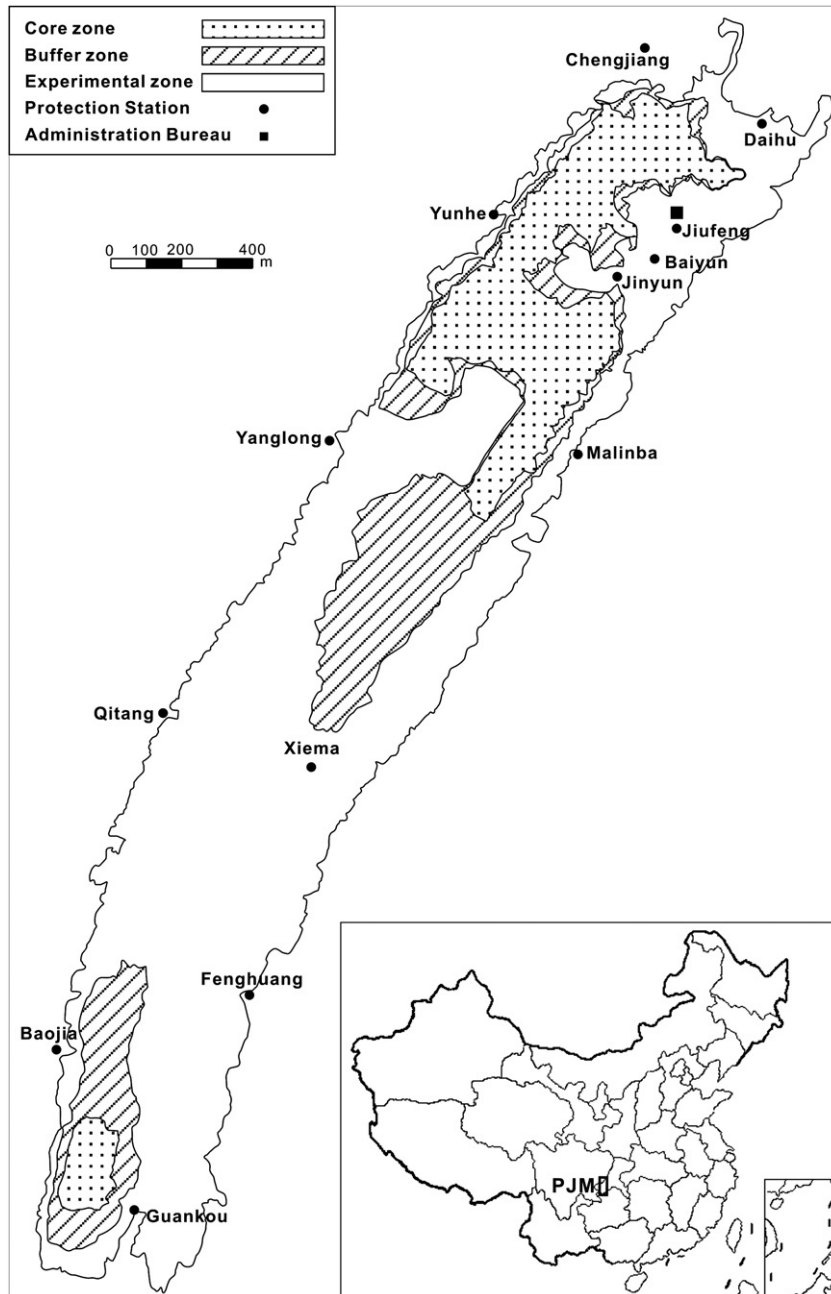


Fig. 1. Functional zoning map of the PJM.

However, the inhabitants emphasize their losses far more than the benefits received from the protected areas (Maikhuri et al., 2001; Wells, 1996). During the past few decades, there have been increased reports of crop damage and livestock loss caused by wild animals (Mishra, 1997; Newmark et al., 1994; Weladji and Tchamba, 2003). Furthermore, lack of suitable compensation often exacerbates the life quality of local residents, and results in greater dissatisfaction with wildlife conservation (Bajracharya et al., 2006; Maikhuri et al., 2001). Such conditions may even lead to poaching and violent conflicts.

The conflict assessment is considered to be an indispensable component in the protected area-community conflict resolution framework (Lewis, 1996). Due to the great numbers of the areas and the complicated interactions between local people and the areas, most studies have focused on specific issues, such as hunting

(Steinmetz et al., 2006), extraction of non-timber forest products (Dzerefos and Witkowski, 2001), grazing (Cooper et al., 2005; Wezel and Bender, 2004), crop damage and livestock depredation by wildlife (Bandara and Tisdell, 2003; Mishra, 1997; Rao et al., 2002), and traditional ecological knowledge (Dowsley, 2009; Lewis et al., 2009). Although management effectiveness and management planning have already been widely employed to evaluate and ensure the appropriateness of protected area management (Hockings et al., 2000; Thomas and Middleton, 2003), a few studies have assessed the protected area-community conflicts ad hoc and described the relationship between social context and environmental attitudes of local people and the conflicts.

Recently, the attitudes and perceptions of local residents have been used to facilitate proper conservation management in protected areas (Allendorf et al., 2007; Cihar and Stankova, 2006; Sekhar, 2003).

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