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BIODIVERSITY CONSERVATION IN PROTECTED AREAS:
LOCATING EQUITABLE POLICIES

By

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Abstract

Ideological conflict among stakeholders characterizes the debates surrounding biodiversity conservation in protected areas. The involvement of indigenous and local communities in the management and governance of protected areas is widely accepted by state governing bodies, however their role in management is often unclear. Indigenous groups have expressed dissatisfaction with lack of access and restrictions placed on gathering and extracting resources from protected areas. Examination of key stakeholder perspectives uncovers differing values. Unifying these divergent perspectives into an overarching theory may not be plausible. Entering into policies based on collaboration and dialogue between stakeholders may lead to innovative management. I argue that governance of protected areas and biodiversity conservation strategies should utilize a pluralistic approach of co-management. The implications of co-management for indigenous communities are the enhanced capacity and empowerment of traditional and indigenous communities to engage in equitable governance of protected areas and biodiversity conservation schemes. The state governing bodies would potentially benefit from recognition of their international commitment to biodiversity conservation and recognition of traditional ecological knowledge and indigenous autonomy.

Introduction

Biodiversity and its conservation has become a prominent topic in contemporary political ecology issues. Historically, biodiversity conservation has largely developed from Cartesian principles of human-nature duality and neo-Malthusian principles of the damaging effects of growing populations. Western epistemological perspectives on nature and biodiversity have shaped the way conservation has been strategized and implemented. Many efforts to establish protected areas are characterized by poor relationships with local and Indigenous communities. One issue is the application of the same model without regard to the specific circumstances of the local community or environment. The social and ecological ramifications of approaches to biodiversity conservation that are not environmentally or culturally specific are manifold, ranging from further ecological degradation to denying community sovereignty. Strategies for biodiversity conservation typically adhere to a ‘fortress’ model of conservation in which protected areas are geographically defined, protected and governed as national and provincial parks, preserves, and conservation land.

This research paper seeks to answer the following question: Can policies for biodiversity conservation in protected areas be implemented that are socially equitable for local Indigenous communities and that simultaneously fulfill ecological concerns? This research question is motivated by a complex social and ecological problem. The aim of this question is to gather insights and expand upon current models of conservation to locate solutions that address social, environmental and stakeholder

interests. A transdisciplinary approach will be used, involving insights and perspectives from multiple disciplines and crossing societal boundaries through inclusion of stakeholders, private and public sectors, to locate an understanding and potential solutions to the complex issues of conservation, indigenous rights and management of protected areas (Repko 2008:15). Waterton National Park located in Southwest Alberta and the Kainai (Blood) tribe of the Blackfoot Confederation located to the south and east of the park will be examined as a case study.

Biodiversity

Biodiversity refers to the diversity of life and the degree of variation between these life forms through all levels of biology in a particular geographical area. Biodiversity has been determined to be in decline over the past century and it is anticipated that it will continue deteriorating (Bocking 2000: xii; Brown 1998:75; Krishnan 2008:1, 6). International governing bodies, such as the United Nations, have recognized the preservation of biodiversity as an urgent and vital global issue. Parks Canada has publically stated that they are committed to this task through the establishment of new parks and by ensuring the viability of existing parks. They note the unique opportunity and stewardship that National parks have to both conserve and sustain biodiversity (Parks Canada Agency 2000:10).

Creating effective politics for protection of biodiversity is complex for a number of reasons, such as the temporal differences between biodiversity loss and political processes; the lack of spatial relationship between ecosystem boundaries and political regions; the gaps in scientific knowledge; and the dominance of neo-liberal market driven principles. The multidimensional character of biodiversity conservation

poses challenges in developing and implementing strategies and policies. The management and conservation of biodiversity is constrained and influenced by contemporary socio-political and ecological conditions (Krishnan 2008:1; Paehlke 2000:278).

The main tactic currently implemented for biodiversity conservation in Canadian protected areas is based on a model of strict preservation and limited human contact, and is founded in the assumption that human contact is generally damaging to biodiversity. The knowledge that this model is based on is legitimized through the authority of western environmental science and political support. The terms and ideas behind concepts central to this model such as *nature* and *biodiversity* are based on a set of discursive elements. These socially and politically constructed concepts arose from the history of colonialism and have normalized the fortress style conservation over other possible actions. Biodiversity is therefore a sociopolitical construction constituting a powerful interface between nature and culture (Braun 2002ii:274; Escobar 1998:75).

The concept of biodiversity protection is problematic in both its application to resource management and its attempts to simultaneously satisfy the goals and values of the local, state and global community. In order to critically assess the relative success or failure of a given biodiversity conservation approach, the particular historical, social, political and economic contexts in which the environment is embedded must be analyzed. The cross-cultural application of biodiversity conservation methods accepted in one locale may have results different from those expected in another (Kandya and Gupta 2007:276).

Waterton Lakes National Park

Established in 1895, Waterton National Park is a part of land designated as one of the largest intact ecosystems in North America, termed the Crown of the Continent. The Crown of the Continent ecosystem is currently managed internationally by Canada and the USA through provincial, state and federal agencies and First Nations. The stakeholders involved with Waterton have diverse interests, from environmental concern to tourism to resource industry and stock grazing. In addition to having both international and national park status, Waterton was designated by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a Biosphere Reserve in 1979. The Waterton Biosphere Reserve emphasizes the importance of a sustainable, community-based regional economy and conservation of biodiversity, landscape and social values in their mission statement. The biosphere reserve has no governing authority and the organization is composed of park officials and local community members, however there appears to be a lack of Indigenous inclusion or participation in this organization (Waterton Biosphere Reserve). The Biosphere concept, as piloted by UNESCO, is based on a system of zoning, in which there is a strictly protected core area surrounded by a buffer zone in which approved and regulated economic activities are allowed by the organization (Adams & Hutton 2007: 150).

Ecological Perspective

According to the Waterton Lakes National Park of Canada Management Plan, biodiversity in the park is in good condition and appears stable (Parks Canada Waterton 2010:11). The Parks Canada perspective is primarily concerned with the measurable status of biodiversity and the effectiveness of the conservation strategy.

This management plan states that ecological and conservation innovation are essential park priorities. A central element to maintaining and furthering ecological integrity is the stability of biodiversity. The plan emphasizes the engagement of visitors, scientists, regional land managers and residents in initiatives for restoration and knowledge of ecological processes and a long-term monitoring program to measure the status and trends of biodiversity in the park (Parks Canada Waterton 2010:21) .

Parks Canada states that ecosystems and biodiversity have integrity when their native components (plants, animals and other organisms) and processes (growth and reproduction) remain intact. Waterton Lakes National Park has been identified as containing a rich variety of plant species. These plants are threatened by invasive non-native plants and at least six plant species have been identified as at risk, a risk to biodiversity. Climate change and the effect on ecological systems in Waterton have been identified as an area in need of greater understanding. Key points in regard to biodiversity conservation, as identified by Parks Canada, are to prevent further introduction of non-native species and to reduce their current presence; to maintain the habitat supporting viable wildlife and fish populations; and to reduce the decimation of priority species by human impact. (Parks Canada Agency 2000:2; Parks Canada Waterton 2010:11, 46).

The perspective of Parks Canada, as outlined above, promotes the conservation of biodiversity for its intrinsic value. Biodiversity should be conserved for the sake of itself and the benefit to the ecosystem. This approach exemplifies the belief that large natural areas, free of significant human impact are necessary for species protection. This fortress model of conservation is effective in the protection and encouragement of

increased biodiversity; however it also best suited to locations where there are no claims to human residence in the area (Robinson 2011:961,962).

Indigenous Perspective

The Indigenous perspective is concerned with land tenure resolution, livelihood opportunities, and governance and decision making authority over protected areas. The report on ecological integrity in parks Canada emphasizes the role and its increasing scope Aboriginal peoples have in protected areas. The formation of partnerships and First Nations governments and communities is touted as an essential component for successful protection of national parks through co-operative management (Parks Canada Agency 2000:18). Involvement of indigenous peoples is often cited by Parks Canada through showcasing their history, culture and relationship to the landscape. Little mention is made of the existence of contemporary governance of their historical lands (Parks Canada Waterton 2010:23). According to the report on ecological integrity in national parks, Aboriginal peoples in Canada have a clear role within national parks, however, it is not a role consistently recognized, respected or applied by Parks Canada and Canadian citizens. Effective partnerships between national parks and indigenous people provides potential to teach others about traditional ethics and respect in conjunction to the land (Parks Canada Agency 2000:15).

Indigenous groups with a lengthy residence in a particular environment are likely to possess a large base of traditional ecological knowledge accumulated through time and transmitted through generations. Traditional ecological knowledge is often inherently adaptive and practical as it has evolved and adapted to the environment over long periods of time and has great potential for biodiversity conservation. The ties to

the landscape developed through historical occupation and dependence upon the environment for resource provisions are likely to create a stakeholder position and contribute to an active interest in conservation and enhancement of biodiversity. Traditional ecological knowledge may involve an intimate relationship between belief systems and environmental management, which may be contrary to a western viewpoint in which ecological management is generally aligned with an objective scientific viewpoint. Conservation in this sense is twofold – involving Aboriginal communities in management of biodiversity serves to enhance both cultural and ecological conservation (Gadgil, Berkes and Folke 1993:151). Colchester (2004) believes that Indigenous peoples and their communities have an important role in ecological management as a result of their traditional ecological knowledge. He notes that co-management is often hailed as the appropriate middle ground, within which the needs of all stakeholders can be negotiated and acceptable compromises achieved, provided the community is also given tenure of the land (Colchester 2004: 148).

One of the difficulties in the integration of the knowledge associated with environmental science and those of indigenous groups is related to the language used. The language of traditional ecological knowledge is not necessarily similar to that of scientific discourse. In order for these viewpoints to share and unite their respective perspectives, there is a requirement of mutual respect, an investment of time and willingness to accept the other perspective as a valid plural (Ford and Martinez 2000:1250).

The Kainai Tribe Perspective

The archaeological record indicates continuous human occupation in the Waterton region for the past 10,000 years. In 1877, the Kainai reserve boundaries were delineated by the signing of Treaty 7, and were located to the East of what is now Waterton National Park. The Kainai First Nations have reported dissatisfaction with the settled land claim and the lack of a co-management agreement (Timko and Satterfield 2008:246). The Waterton Lakes management plan specifies that effective management of the park will require close collaboration with regional stakeholders and identifies the Kanai First Nations as one of these stakeholders. (Parks Canada Waterton 2010:6). It is acknowledged in the Parks management plan that the Aboriginal people have a valuable and unique relationship with the land that goes back thousands of years. As a result of this, Aboriginal people have knowledge of the land, its processes and its components and as such are important resources. The park plan states that Aboriginals will be involved in consultation and their perspectives, cultural traditions, traditional ownership and intellectual property will be sought and integrated into the visitor experiences in a respectful manner. The plan states “Parks Canada is committed to work more closely with Aboriginal peoples to assist them in reconnecting with their heritage and more fully participate in and benefit from the park”, however the seventy page plan does not offer any detailed explanation as to how this goal will be achieved (Parks Canada Waterton 2010:6, 15).

The Kainai have a settled land claim to the land adjacent Waterton National Park. The park however has provided little to no opportunity for livelihood, employment or governance involvement (Timko and Satterfield 2008:249). The local Kainai community have requested permission from Waterton National Park to collect

plants from within the park but to date have not received permission (Timko and Satterfield 2008:245). The Kainai have noted that they are required to pay the regular access fees to gain entry to Waterton National park, unless they are requesting entrance on the basis of traditional cultural use, such as a for engaging in a vision quest. Representatives from the Kainai Nation have stated that the requirement for them to pay access fees makes them feel as though they are regarded as tourists on their traditional ancestral lands. The rights for access to Waterton national Park by the Kainai were not negotiated between Parks Canada and the Kainai, rather Parks Canada made and enforced regulatory payment of access fees (Timko and Satterfield 2008:246-7).

For National Parks to be considered equitable from an Indigenous perspective, the rights, titles, and access of Indigenous groups must be protected by the protected area. Indigenous groups must also be involved in management and decision making on a fair and equitable basis, rather than cursory consultation or no consultation. The Kainai have also stated that they believe co-management agreements to be excellent, however Waterton National Park authorities have not been willing to involve the Kainai in park management (Timko and Satterfield 2008:247- 8).

Political Ecology Perspective

The political ecology perspective, as applied to the issue in question, involves the following specific areas of concern: (i) the implications of cross-cultural application of protected area strategies and (ii) cultural hegemony underlying policies of protected areas. Political ecology seeks to identify power relationships and hegemonic structures behind protected area management. It examines local, regional

and global and the connections between environments, social and political dimensions of protected areas. Political ecology is concerned with the discursive construction of the environment and the acquisition, dissemination and legitimization of knowledge about the environment and conservation. (Neumann 2005:2-10).

Political ecology is a complex, diverse transdisciplinary field. It involves the analysis of environmental and ecological conditions as products of political and social processes. Political Ecology as a term does not have a definitive definition and is used for various purposes. A widely accepted definition of political ecology describes it as a combination of the issues of ecology and a broadly defined political economy. This combination includes the ever-evolving dialectic between society and environmental resources and between groups that exist within the matrix of society (Bryant 1992:13; Forsyth 2003a:3).

Adams and Hutton (2007) state that ecological conditions are a material representation of political processes and that the way 'nature' is understood is also inherently political (Adams & Hutton 2007:148-149). Conservation planning and protected area policy has been dominated by people that are trained in natural sciences and has drawn almost exclusively on science-based paradigms (Adams & Hutton 2007:167). Conservation scientists are disputing the previously held assumption that people and diversity can be accommodated together without conflict (Adams & Hutton 2007:166). Political ecology aims to unite understanding of the inextricable relationship between the social and natural realms. It aims to create a new paradigm integrating cultural, ecological and economic factors into ecologically and culturally sustainable strategies (Adams & Hutton 2007:149; Escobar 1998:63). The relationship

between people and nature is a highly politicized issue, involving rights, access to land and resources, the role of the state and the power of scientific versus other ways of knowing and understanding nature (Adams & Hutton 2007:151).

Kandya and Gupta (2007) suggest that there is a correlation between cultural diversity and biodiversity. They suggest that the collective knowledge and management of biodiversity lies in cultural diversity and conversely the conservation and management of biodiversity aids in reinforcement of cultural values. Kandya and Gupta emphasize the importance of traditional ecological knowledge and traditional management as sustainable practices for both biodiversity conservation goals and cultural identity and conservation. Recognition and validation of the relationship between cultural diversity and biodiversity and the relevance of this relationship to conservation is fundamental to creating equitable conservation policies (Demarco and Bell 2000:362; Kandya and Gupta 2007:275). Indigenous groups may benefit from biodiversity conservation beyond the ecosystem. Indigenous group identity and its linkages to the ecosystem reinforce cultural preservation and values. This places traditional groups as beneficiaries of conservation and as appropriate stewards of biodiversity conservation on account of their traditional ecological knowledge and environmental management knowledge as well as their rights to access and management of their historical lands (Robinson 2011:959-960).

Examination of the history of conservation in Canada conveys a systematic approach based on the concept of protecting wilderness for the benefit of future generations, but to the exclusion of local and indigenous community practices. For example, in Waterton, the way in which an area may be enjoyed is dictated by

regulations such as staying on the path, not picking any flora nor hunting wildlife and only camping in approved fee-based campsites. This system is clearly based on a specific vision of deemed appropriate use. Political ecology disturbs the widely accepted definitions of wilderness and why and how wilderness ought to be protected (Timko and Satterfield 2008:242-246).

Common Ground:

Fikret Berkes (2007) specifies that regardless of the approach taken, it cannot necessarily be effectively applied cross-culturally as a panacea to the issue in question. He has noted that both top-down and bottom-up approaches to conservation involving anything from privatization of conservation areas to community-based approaches have been debated for their respective pros and cons. He notes that what has been missing in this debate regarding biodiversity conservation is the discussion of pluralistic approaches and its potential merits. For example, a pluralistic approach may involve authority bestowed across multiple institutions (Berkes 2007:15188-151939).

The insight gained into the issue surrounding biodiversity conservation and competing interests of stakeholders is that resolution of conflicting ideologies may not be possible. The ideologies of differing stakeholders vary according to their own interests. Ecologists place an intrinsic value on biodiversity conservation and are likely to envision a strictly protected core area, free of human contact and natural resource extraction or use. Indigenous communities, such as the Kainai, are concerned with land tenure resolution, livelihood opportunities, and the governance and decision making authority over protected areas that are in or near their traditional lands. Rather than attempt to bridge the differences into a unifying ideology, opening up to the

possibility of plural approaches to biodiversity conservation may yield better results. Co-management of protected areas and biodiversity conservation allows the collaboration of diverse ideologies, yet still allows each perspective to maintain its own position and promotes its own interests. At present, there are no formal co-management agreements between the park and the neighbouring indigenous communities (Timko and Satterfield 2008:242; Waterton Biosphere Reserve).

Co-management has been defined as a responsibility and shared decision-making agreement between government and local stakeholders into a system combining state and decentralized authorities. Both groups are held accountable, with the aim to combine their strengths and mitigate the weaknesses. Co-management, in its ideal form, would integrate pluralistic worldviews through engagement, mutual respect and understanding between indigenous communities, stake holders and government. These groups would bridge their differences through their common goals of social justice, environmental conservation, equitable sharing of responsibility and management, and sustainable resource use. Effective co-management should be understood and applied as a dialectical approach engaged in an iterative process of governance rather than simply a power-sharing arrangement. Both indigenous communities and state governing bodies have the potential to reap benefits from co-management. Indigenous communities have the potential for enhanced capacity to engage in governance and management of biodiversity and protected areas while state governing bodies have enhanced opportunity to fulfill international obligations for biodiversity conservation and indigenous rights (Carlsson and Berkes 2005:65-67; Goetze 2005: 245-263).

Integration

The success of a pluralist approach that accepts all stakeholder ideologies as legitimate and valid is measurable through the results of a co-management agreement. In order to gather knowledge of and understand the results there must be a form of information gathering. Qualitative results may be garnered through discussion and seeking feedback from the various stakeholders involved. Dialectical approaches that encourage discussion and debate in an inclusive mediated environment will allow participants to voice their concerns and respond to other concerns. Amendments and adjustments to co-management agreements should be facilitated as they are needed through engagement in iterative processes, such as negative feedback loops.

Conclusion

A commitment to ways of governing and organizing that are participatory and non-hierarchical is fundamental for policies to be both socially equitable and effective in the conservation of biodiversity located within protected areas. Adopting an approach to biodiversity conservation that involves stakeholders and that values their respective knowledge and contributions as equally valid is a necessary component for co-management to succeed. Approaches to co-management should be iterative, allowing flexibility, change and integration and/or acceptance, of the plural perspectives of traditional ecological knowledge, scientific ecological knowledge, and other stakeholder perspectives. Biodiversity is not delineated according to human imposed divisions, such as National Park boundaries, and as such cooperation between local community and parks is a necessary component of conservation that is mutually focused on environmental and social goals. The forging of new alliances between

previously disparate groups for biodiversity conservation of protected areas will create inclusive managing forces that have greater potential for more effective conservation, and respecting human rights and cultural diversity.

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