

# **Cultural and Social-Ecological Significance of the Region Surrounding Teztan Biny (Fish Lake) to the Xenigwet'in and other Tsilhqot'in Nations**

## **Relevant to environmental impacts of the proposed "New Prosperity" mine**

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Prepared for:

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### **Focus of Report**

This report is a contribution to the Canadian Environmental Assessment (CEA) hearings on the proposed "New Prosperity" gold and copper mine at Teztan Biny (Fish Lake), Y'anah Biny (Little Fish Lake) and Nabas (surrounding meadows) in Tsilhqot'in territory of British Columbia. It focuses on what I have learned through seven years of researching cultural, social and ecological systems in the territory of the Xenigwet'in First Nation and other Tsilhqot'in Nations. Specifically, I will comment on:

- How aspects of Tsilhqot'in culture, knowledge, livelihoods, socio-economics, and community capacity are inextricably related to the ecological systems to be impacted by the proposed project.
- How the social-ecological resilience of the Xenigwet'in and communities surrounding the project area would be impacted by the proposed mine.
- The national and global significance of the current social-ecological system, culture, and traditional management system in Tsilhqot'in territory.

My role is not to speak *for* Xenigwet'in or Tsilhqot'in people. It is to speak *with* them, to offer my voice as a respectful colleague of theirs—as someone who has bridged between local communities and an international community of researchers, scholars, and professionals—recognizing the significance of the people, place and culture that would be damaged by the proposed mine.

## **Cultural, Social and Ecological Relationships**

Current research and the most up-to-date professional practice in land use planning and natural resource management recognize that people and the environments in which they live are inextricably interrelated as social-ecological systems (Berkes & Turner 2006; Gunderson and Holling, 2002; Reid et al., 2006).

In the case of the proposed New Prosperity mine, the lands, waters and ecosystems that would be impacted and altered are essential to the maintenance of culture, economy, community health and well-being of people who depend upon the area that would be affected. These relationships are complex and systemic. They cannot be maintained through the simplistic replacement or preservation of certain structural features. Rather they depend on the integrity of the system as a whole (i.e. retaining a “structural feature” called Fish Lake while severely impacting the surrounding lands and watershed is not a solution to the negative social-ecological and cultural effects of the proposed mine). Impacts to any part of the environmental system have profound implications for Tsilhqot’in socio-cultural knowledge and practices, as well as local livelihood activities, economies, health and well-being, and community resilience for all residents associated with this area.

This is not to say that all change or economic development would be negative. It is to say that this project – the scope and scale of damage that it would impose upon the natural systems of the region – would not only irreparably damage local communities, culture and livelihoods, but would severely impair their capacity to cope and adapt to future stressors and changes.

Local First Nations communities, in particular, are under considerable stress as a result of historical and ongoing political and economic pressures. As Shari Hughson (2010) reported at the previous CEA hearings for the proposed mine at Teztan Biny, the Xeni Gwet’in and other Tsilhqot’in nations have demonstrated the capacity to respond to, recover and heal from past stresses with tremendous strength. The key to their strength, self-reliance, resilience and adaptive capacity is the integrity of their land base. This point is explained in more detail in the joint publication by Bhattacharyya, Baptiste, Setah and William (2013) submitted with this document. Y’anah Biny (Little Fish Lake), Teztan Biny (Fish Lake), and Nabas, the surrounding environment of forests, meadows and wetland habitats, together form a place that is crucial to Tsilhqot’in cultural and social strength. The place is increasingly important as other landscapes where Tsilhqot’in people practice traditional livelihood activities, gather medicines, and maintain their spiritual and cultural strength are developed, changed by industry, destroyed or made inaccessible for various reasons. The land – as First Nations have chosen to keep it – is essential to the capacity of Tsilhqot’in communities to retain cultural integrity and strength as they cope with stressors in the future.

## **Xeni Gwet’in and Tsilhqot’in Strengths: At Risk from the Proposed Mine**

My research was primarily with Xeni Gwet’in colleagues, and field time was spent in communities and the backcountry throughout their territory. The results and understanding that emerged from my research and time in the Chilcotin region pertain to Xeni Gwet’in in

particular, but also yielded some understanding and partnership with Tsilhqot'in culture and peoples from other Tsilhqot'in nations. Two points emerged most clearly:

1. The Xenigwet'in people are a positive model of a First Nation with tremendous internal strength and self-reliance in their own culture, language and community. This is not to idealize the community, but rather to recognize that they bring an unusual cultural strength to their engagement with local and global issues. Xenigwet'in are actively working to enhance their community well-being by maintaining and developing a local economy that supports their culture, including their responsibilities as caretakers of the natural environment in their territory.
2. That strength of community, culture, and governance is based in the relationships that Xenigwet'in and other Tsilhqot'in people have, individually and collectively, with the land and its resources.

The proposed mine, and the constant, ongoing threat of aggressive, unwanted natural resource exploitation places this healthy social-ecological system at risk. This region, the Xenigwet'in people and Tsilhqot'in First Nations are positive role models for remote communities across Canada. They are leaders in developing a sustainable local economy that enhances resilience and supports First Nations culture. Yet, the proposed mine threatens to spread and exacerbate problems in this region that federal, provincial and First Nation governments are already struggling to cope with in other regions, such as: lack of reliable access to uncontaminated fresh water, habitat loss for wildlife populations important to Indigenous culture and diet, loss of access to usable traditional medicines and foods and hence the language and cultural knowledge about how to harvest them, language loss and erosion of cultural wisdom, as well as social problems related to the colonial legacy and lack of cultural continuity (Patrick, 2011; Pearce et al 2011; Royal Commission on Aboriginal Peoples, 1996).

### **Key Relational Components of the Social-Ecological System**

Time spent on the land, in specific places, engaged in particular activities, is not only a matter of maintaining tradition, but is central to the evidence-based monitoring of natural resources and the ongoing maintenance of cultural and environmental knowledge. In turn, time spent on the land in the region around Teztan Biny supports the individual and collective cultural identity and understanding that facilitates good governance, and sustains community well-being through progressive, culturally appropriate development in the future.

#### ***Language, Knowledge & Practices***

Language is a core aspect of culture, traditional knowledge and practice on the land, and identity (Basso 1996). During my time in Xenigwet'in territory, I learned that Tsilhqot'in culture, knowledge, and language are inextricably linked and inherently related to specific places throughout their traditional territory. Indeed, the Tsilhqot'in language is most effectively spoken, learned, understood, shared and taught *in situ*: on the land. Much of the richness of cultural knowledge and practices is communicated through, and held within the Tsilhqot'in language (Dinwoodie 2002), which is linked with specific places, and practices are carried out in those places (Pye 1992). Furthermore, some plants and animals are highly localized to certain

areas of Tsilhqot'in territory, and the maintenance and transmission of the relevant knowledge and practices linked to those species depends on returning to particular places so that the words, concepts and stories that convey and maintain them can be spoken and passed on in the correct context.

The landscape, plants, animals, habitats, water courses and ecosystems within the project area for the proposed mine are core parts of the local cultural library, archives, and school for the Tsilhqot'in people. In a culture that is unique and orally shared, maintained and transmitted, knowledge is not fully or properly represented in books, or written documents. Gaining knowledge is a process as much as a concept – a way of being that is inherent in relationships between people and specific places. A severe alteration to the landscapes and natural systems in the project area that is not culturally mediated will fundamentally impact the availability and richness of cultural knowledge. Such changes would affect the local communities in the same way that removal of libraries, archives, and schools would affect the communities of Western cultures. The landscapes (including ecological systems, flora and fauna) within Tsilhqot'in territory are the primary “cultural facilities” of local communities. Unlike in many Western communities, these facilities *cannot* be replaced or moved to new locations, nor can their functions be reduced to structural parts alone.

While people and places change over time, a sudden, drastic alteration to the landscape against the will of the people who dwell within it would have a devastating effect on people's ability to engage, share, and maintain cultural knowledge.

### ***Management of Natural Resources and Community Development***

Xeni Gwet'in and Tsilhqot'in First Nations have a long tradition of successfully managing the natural resources in their territory. The fresh water systems, wildlife, fish populations, and intact forest systems and their abundance are outcomes of traditional Tsilhqot'in management systems. Furthermore, many of the current plans that the Xeni Gwet'in have for ongoing and future resource management, economic development, and community well-being are rooted in these traditional management systems.

A key criterion for evaluating the success of community development and natural resource management decisions in this region is whether they are compatible with, and supportive of, the maintenance of culturally appropriate interactions between people and the landscape. Management actions and developments that facilitate stronger relationships between local people and their lands, long-term social-ecological resilience, and ongoing cultural well-being while supporting diverse livelihood activities within the community are a sign of positive natural resource management decisions and truly sustainable community development. Use of resources in a way that hinders, removes, or damages people's ability to relate to the land, and irreversibly alters or harms social-ecological resilience and cultural well-being while narrowing options for livelihood activities within the community are regressive and unsustainable.

“Natural resources” are not simply things, in this indigenous traditional management system, but rather they reflect relationships, processes. The Xeni Gwet'in use of natural resources in the

area that would be impacted by this proposed mine is no exception. Maintaining the Xeni Gwet'in and Tsilhqot'in First Nations' rights to hunt, fish, and harvest natural resources in the project area does not simply mean maintaining a supply and populations of those plants and animals. Of equal importance is the maintenance of where and how those resources are harvested and accessed. Essential qualities of the whole system and place must be maintained, including the distance from intensive resource development, sacred quietness, absence of dust and contaminants, and safety from garbage and the impacts of culturally inappropriate human behaviour. These qualitative factors directly influence the spiritual power and efficacy of traditional medicines and cultural experiences on the land, as well as the psychological and physical health of people engaging in traditional activities. The Tsilhqot'in people have the right to the *places and processes* by which they hunt, fish, and harvest natural resources because those are as crucial as the things themselves.

A central characteristic of Xeni Gwet'in traditional management systems is that there are natural feedback loops within the social-ecological relationships that comprise it. People learn, develop and maintain the capacity, knowledge, skills and wisdom to make good management decisions by engaging in activities on the land. In other words, time spent on the land (empirical data and experiential learning) is the basis for good governance, community leadership and resource management in the future among the Xeni Gwet'in people. The freshwater, riparian and terrestrial systems that would all be irretrievably altered by the proposed development are thus central to the current and future effectiveness of Xeni Gwet'in governance and resource management.

### ***Community Capacity, Self-Efficacy and Strength***

Personal strength and identity are integrated for many Xeni Gwet'in people with their collective identity as effective caretakers and protectors of the land. Self-efficacy is distinct from self-confidence or self-worth. Perceived collective efficacy is "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura 1997, pg 477).

This concept illustrates how the collective identity of Xeni Gwet'in people translates into capacity for community development and leadership. They self-identify as Caretakers of the land, and assertively maintain the right to exercise that responsibility (Bhattacharyya et al., 2013). The identity as Caretakers and collective self-efficacy arising from engaged, active decision-making regarding local lands and resources characterize people's behaviour and decisions about community priorities, land use, and development. The overall effect is that community members have internal, collective strength and confidence that stem from the knowledge that they and their ancestors have protected the land in the past and that they will maintain a strong relationship with it. In turn, it reinforces the feasibility for current and future generations to continue to protect the land and to combine traditional values with modern livelihoods.

Teztan Biny, Nabas and the surrounding landscape are central not only to the maintenance of collective identity and well-being, but also to the teaching, learning, sharing and transmission of

these qualities and cultural knowledge to children and youth – the leaders of the future. In this way, the region is a vital part of the support available to young Tsilhqot'in people. It is a place where elders and youth connect, where oral knowledge and skills relating to the land are shared and passed on between generations. The sense of self and hope that many young people rely on to cope with negative social pressures is tied to their self-efficacy in protecting those resources that are sacred to the community. These are qualities that many First Nations in Canada struggle to foster in their youth. Research has shown that a loss in the practices and access to areas that provide cultural continuity can have severe negative effects on the mental health and social engagement of First Nations youth (Taylor & Osborne, 2010).

The potential destruction of lands and waters around Teztan Biny (Fish Lake) represent a major threat to the ways in which culture is passed between generations, and to the sense of hope and self-efficacy of Tsilhqot'in youth. Stress on the community from the ongoing need to defend Teztan Biny is experienced as an extension of the colonial processes that have attempted to deny Tsilhqot'in people autonomy over their lands and resources. It is my opinion that if this mine project on Tsilhqot'in territory is approved against the clear and strenuous objections from Tsilhqot'in people, it will severely undermine the collective self-efficacy among young adults, and increase the sense of disaffected hopelessness that afflicts so many youth from First Nations communities in other regions. The current generation of leaders in Xení Gwet'in and other Tsilhqot'in communities demonstrate tremendous dignity and efficacy in their assertion of culture, rights, and responsibilities to the land and to society. The proposed mine threatens to irreparably damage one of the most important sites for leaders and elders to help youth gain these qualities as they mature. Equally important, the decision about whether this proposed mine project proceeds threatens to profoundly undercut the sense of hope, autonomy, and engaged citizenship among future generations of Tsilhqot'in leaders (Chandler & Lalonde 2008).

### **Social-Ecological Resilience**

The concept of resilience, when applied to social-ecological systems, has three characteristics (Resilience Alliance 2002):

- The amount of change a system can undergo while retaining controls on function and structure;
- The degree to which the system is capable of self-organization;
- The ability to build and increase the capacity for learning and adaptation.

In psychology, the term resilience applies to the processes by which people adapt to and recover from stressors or adversity (Bandura, 1997). Social-ecological resilience (Lebel et al., 2006; Turner et al., 2006) is an integrative description of sustainability and the capacity of communities and ecosystems to withstand stress and disturbances, and adapt to change while retaining essential qualities. Resilience involves a particular set of circumstances for many Indigenous peoples. As Kirmayer et al (2011) state in the *Canadian Journal of Psychiatry*:

“In Canada, the overriding social realities of indigenous peoples include their historical rootedness to a specific place (with traditional lands, communities, and transactions with the environment) and the profound displacements caused by

colonization and subsequent loss of autonomy, political oppression, and bureaucratic control (pp. 84).”

Given the inter-relatedness of culture and ecosystems in Xeni Gwet’in and Tsilhqot’in communities, specific places within the proposed mine project area are key to the social-ecological resilience of the surrounding communities. The project area is a key part of the headwaters and watershed of the Taseko River system. The lake and wetland riparian areas are the ecological lungs of Xeni Gwet’in territory. The project area that would be irreversibly destroyed by the proposed mine is *home* to a number of local families, and to the Xeni Gwet’in people as a culture. The intact structure and function of those ecological systems function to support resilience within Tsilhqot’in Nations and local communities. For local communities and culture, the project area is the equivalent to community members’ water source, farm, grocery store, school, university, cathedral, grave memorial, park land, community hall, living room, kitchen, bedroom, and much more. The proposed mine would effectively represent an aggressive take-over and destruction of sacred space, and of all those functions that are essential to the quality of life, health, well-being and culture of local communities. These are functional characteristics that comprise the social-ecological resilience of the region – its ability to adapt and respond to stressors and changes.

Hence the social capacity, good health, and governance strength that underlie a strong community and a sustainable economy rooted in local culture are based in the relationship that Xeni Gwet’in people have with the intact, functioning ecosystems in their territory. The region around Teztan Biny and Nabas is a core part of those ecosystems.

### **Significance**

The ecological and cultural characteristics in this area, that would be irreparably damaged and lost by the proposed resource extraction activities, are globally significant.

At the national level, Indigenous communities and nations across Canada are grappling with a number of problems related to lack of access to fresh water and safe country foods, and a combination of internal and external community stresses. Such problems and the challenges they create for Indigenous communities are largely the result of Canada’s colonial legacy, and ongoing institutionalized aggression in the form of imposed resource development. The current social-ecological system in the project area is an example of healthy, resilient system that can serve as a model for other rural and remote communities in Canada. This is not to claim that Xeni Gwet’in are without problems. Rather, they have the cultural and functional capacity to address and cope with their problems in a positive way, provided that capacity is supported rather than compromised by economic development. The source of strength that sustains this system, and the culturally and ecologically unique features of this area, is the relationship between people and the land. Those characteristics are worthy of protection, recognition, and emulation in other communities across Canada. However, externally controlled resource extraction developments such as the proposed mine are known to exacerbate many external and internal stressors within small communities (Turner et al., 2013).

The *United Nations Declaration on the Rights of Indigenous Peoples* (2007) states that:

Article 20 (pg. 8)

“1. Indigenous peoples have the right to maintain and develop their political, economic and social systems or institutions, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities.”

Article 25 (pg. 10)

“Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.”

Article 29 (pg. 11)

“1. Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands, territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination.

“2. States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.”

It has been clearly established and stated by the Tsilhqot’in First Nations that the proposed mine would violate each of these rights. Canada has issued a statement of support (AANDC, 2010) for the *UN Declaration on the Rights of Indigenous Peoples* (2007). The proposed mine development cannot proceed without directly violating the Indigenous Rights articulated by the UN, and supported by Canada.

### **Summary of Points**

Teztan Biny (Fish Lake), Y’anah Biny (Little Fish Lake), Nabas and the surrounding area comprise a region with natural and cultural features of national and global significance. The area as a whole is a core part of the culture and social-ecological system of the Xeni Gwet’in and other Tsilhqot’in First Nations, as well as non-First Nations community members. The impacts of the proposed mine, both short- and long-term, on the lands, waters, plants, animals and people of the region would fundamentally damage the most valuable and unique characteristics of this social-ecological system. The proposed project not only threatens to dramatically and adversely



affect local communities and landscapes, but it would also undermine their resilience – i.e. their capacity to recover from such a major stressor. These negative effects are inherent to the proposed mining operation itself. They are not effects that can be mitigated by re-arranging the component parts of the proposed mine. They are not risks that can be calculated as probabilities. Rather, they would be a predictable and direct result of developing that sacred site for a mining operation.

### **Summary of Personal Qualifications and Credentials**

I have a PhD in Environmental Planning (University of Waterloo), a Master's degree in Environment and Resource Studies (University of Waterloo), and an Honours Bachelor degree in Geography of natural resource management (University of Victoria). In addition, I have applied experience working in British Columbia in the private and non-profit sectors

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My doctoral research was conducted in the Chilcotin, with a focus on ethnoecology, human-wildlife relationships, and integrated approaches to resource management in Xeni Gwet'in territory. <personal/identifiable information removed>

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## **Jonaki Bhattacharyya, PhD**

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### **RESEARCH AREAS AND HIGHLIGHTS**

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- Ethnoecology and human dimensions of relationships with wildlife, landscape and place
- Integrated and community-based conservation research and planning
- Indigenous cultures and livelihood practices in land use management and stewardship
- Cultural perceptions of complex social, cultural and ecological systems
- Land use planning, stewardship, and community development in multi-stakeholder environments

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### **EDUCATION**

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**PhD, Environmental Planning, University of Waterloo, Ontario, 2012.**

**MES, Environment and Resource Studies, University of Waterloo, Ontario, 2003.**

**Shastri Indo-Canadian Institute Summer Scholarship Programme, India, 1998**

**BA, Honours, With Distinction, Geography, University of Victoria, British Columbia, 1998.**

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### **RELEVANT PROFESSIONAL EXPERIENCE**

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- 2012-Present    **Post- Doctoral Research Fellow, Hakai Network,**  
(School of Environmental Studies, University of Victoria, BC)
- 2012            **Post- Doctoral Research Associate**  
(Department of Environment and Resource Studies, University of Waterloo, ON.)
- 2004-2005    **Agricultural Liaison, Conservation Partners Program**  
(TLC The Land Conservancy of BC, Victoria & Penticton, BC.)  
Landowner Outreach and Relations  
Program Development and Strategic Planning
- 2003-2004    **Coordinator, Community Wildlife Monitoring Program**  
(Osprey Communications, Invermere, BC)  
Volunteer Coordination and Wildlife Monitoring  
Landowner Outreach and Communications
- 1999-2000    **Technical Writer and Researcher**  
(Sector Environmental Resource Consulting, Victoria, BC. )  
Environmental Impact Assessment  
Community and Natural Heritage Research
- 1996            **Researcher, Writer and Administrative Assistant**  
(PRP Parks: Research & Planning Inc., Victoria, BC.)  
Assistant: Protected Areas Management and Planning

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**UNIVERSITY EMPLOYMENT AND TEACHING EXPERIENCE**

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**Post-Doctoral Research Fellow** – University of Victoria, BC, 2012 - Present  
Hakai Network & School of Environmental Studies

**Sessional Instructor** – University of Victoria, BC, 2004 & 2013  
School of Environmental Studies

**Post-Doctoral Research Associate** – University of Waterloo, ON, 2012  
Department of Environment and Resource Studies

**Teaching & Research Assistant** – University of Waterloo, ON, 2005-2012  
School of Planning; Dept of Environment and Resource Studies, Faculty of Environmental Studies  
Courses: Communications for Environmental Professionals; Introduction to Environmental & Planning Law; Conservation and Wildland Resource Management; Introduction to Field Ecology.

**Teaching Assistant Developer** – University of Waterloo, ON 2002  
Teaching Resources and Continuing Education (TRACE) (now Centre for Teaching Excellence, CTE)

**Research Assistant** – University of Victoria, 1998-1999  
Eco-Research Chair of Environmental Law and Policy

**Courses**

ES 481: Advanced Topics in Ethnoecology  
ES 400a: Sustainable Community Food Systems

**Selected Guest Lectures**

2012 School of Environmental Studies, University of Victoria.  
Guest Lecture, ES 326: Traditional Systems of Land and Resource Management

2012 Department of Geography and Environmental Management, Wilfrid Laurier University.  
Guest Lecture, GEOG 675S: Understanding and Managing Complex Regions.

2010 Department of Environment and Resource Studies, University of Waterloo.  
Guest Lecture, ERS 381: Restoration Ecology.

2008 Environmental Studies / Recreation and Leisure Department, University of Waterloo.  
Guest Lecture, ENVS 334/REC 334: Introduction to Park Management.

2002 School of Environmental Studies, University of Victoria.  
Guest Lecture, ES 428: Ethnographic Methods of Environmental Research.

2001 Department of Environment and Resource Studies, University of Waterloo.  
Guest Lecture, ERS 496: The Development of Environmental Thought

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## CONFERENCES & SPEAKING ENGAGEMENTS

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- 2012 **Canadian Association of Geographers, Congress of the Humanities and Social Sciences, Waterloo, ON.**  
Presentation, “Lessons for Culturally Rooted Management.”
- 2011 **The Water Institute, Centre for Applied Sciences in Protected Areas, and Centre for Ecosystem Resilience and Adaptation, University of Waterloo, ON.**  
Workshop Session Co-ordinator and Facilitator: Innovations in Water Source Protection, Protected Areas and Ecosystem Resilience
- 2009 **Faculty of Environmental Studies, University of Waterloo, ON.**  
Seminar Presentation “Fieldwork in the Brittany Triangle, BC.”
- 2008 **Friends of Nemaiah Valley (FONV) AGM, Victoria, BC.**  
Invited speaker: “Wild Horses and Socio-ecological Resilience in the Brittany Triangle.”
- 2008 **Parks Research Forum of Ontario (PRFO) AGM, Orillia, ON.**  
Invited plenary session speaker: “Conservation issues where exotic species are popular icons.”
- 2006 **Faculty of Environmental Studies, University of Waterloo, ON.**  
Panel Discussion, “Integrating Indigenous Knowledge in Conservation Planning.”
- 2005 **BC Land Trust Alliance Seminar Series, Naramata, BC.**  
Presentation, “Agricultural Stewardship Options: The Conservation Partners Program.”
- 2002 **International Federation of Organic Agriculture Movements (IFOAM) Conference, Victoria, BC.**  
Research Presentation, “Getting in Touch: Spirituality in Organic Relationship with the Earth.”

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## AWARDS, GRANTS & SCHOLARSHIPS

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### External Grants and Scholarships

- 2009-2010 Wilburforce Foundation - Research Grant, (Principal Investigator).
- 2007-2009 Social Sciences and Humanities Research Council - Doctoral Scholarship.
- 2006-2007 Ontario Graduate Scholarship – Graduate (Doctoral) Scholarship.
- 2001-2003 Ontario Graduate Scholarship – Graduate (Masters) Scholarships.

### Internal Scholarships and Awards

- 2008-2009 Davis Memorial Scholarship in Ecology – University of Waterloo.
- 2007-2009 President’s Graduate Scholarship – University of Waterloo.
- 2006-2007 Davis Memorial Scholarship in Ecology – University of Waterloo.
- 2006-2007 President’s Graduate Scholarship – University of Waterloo.
- 2006 J. Alan George Student Leadership Award – University of Waterloo.
- 2005 University of Waterloo Graduate Scholarship – University of Waterloo.  
Provost’s Scholarship for PhD Women – University of Waterloo.
- 2000 Graduate Entrance Award Scholarship – University of Waterloo.
- 1993 President’s Entrance Award Scholarship – University of Victoria.

## **PUBLICATIONS AND REPORTS**

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### **Peer-Reviewed Publications**

- Bhattacharyya, J., Baptiste, M., Setah, D. & William, R. (2013) "It's Who We Are: Locating Cultural Strength in Relationship with the Land." Chapter 10 in John Parkins & Maureen Reed (Eds.) *The Social Transformation of Canada: New Insights into Community, Culture and Citizenship*. Vancouver: UBC Press.
- Bhattacharyya, J., Slocombe, S. & Murphy, S. (2011). "The 'Wild' or 'Feral' Distraction: Effects of Cultural Understandings on Management Controversy over Free-Ranging Horses (*Equus ferus caballus*)" *Human Ecology: An Interdisciplinary Journal* 39(5): 613-625. (DOI) 10.1007/s10745-011-9416-9.

### **Professional Reports**

- Columbia Valley Botanical Gardens Fundraising Strategic Plan 2004*. Report prepared for: Columbia Valley Botanical Gardens (CVBG) Board of Directors. Written by J. Bhattacharyya, in consultation with CVBG Board of Directors, and TLC The Land Conservancy of BC. Invermere, BC. April, 2004.
- Page, H. and Bhattacharyya, J. (2004). *Integration of Cattle into a Working Forest System: A Literature Review*. Prepared for The West Central Forage Association, Alberta. Invermere, BC.

### **Theses and Dissertation**

- Bhattacharyya, J. (2012). *Knowing Našlhiny (Horse), Understanding the Land: Free-Roaming Horses in the Culture and Ecology of the Brittany Triangle and Nemiah Valley*. Doctoral Dissertation, School of Planning, University of Waterloo, ON.
- Bhattacharyya, J. (2003). *Making Sense of Place: Practicing Spirituality in Organic Relationship with the Earth*. Masters Thesis, Department of Environment and Resource Studies, University of Waterloo, ON.
- Bhattacharyya, J. (1998). *Ganga: River of Purity, River of Pollution*. Undergraduate Honours Thesis, Department of Geography, University of Victoria, BC.

### **Journalistic Articles and Publications**

- Bhattacharyya, J., Sarell, M. and Austen, S. (2005). "Vineyard Workers Become Snake Savvy." *South Okanagan Similkameen Stewardship News*, 11(2), Fall 2005.
- Bhattacharyya, J. (Osprey Communications). (2004) *BIOB Beat: Bighorn In Our Backyard Newsletter*. Issue 4, Spring 2004. Invermere, BC.
- Bhattacharyya, J. (2004) "Wildlife, Wildfire, and Your Land." *The Valley Echo*, 48(1). Feb. 25, 2004. pp. 28.
- Bhattacharyya, J. and Scott, R. (2004) "Conserving Nature on the Farm." *Canadian Organic Grower* 1(2), Fall 2004: pp: 43-44.
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