# FINANCING CONSERVATION MANAGEMENT IN PARKS AND CONSERVATION AREAS: A CASE STUDY OF MOUNT ARROWSMITH BIOSPHERE RESERVE

By

HOLLY CLERMONT

B. Sc., University of Victoria, 1990
Dipl. Renewable Resource Management,
Lethbridge Community College, 1987

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We accept this thesis as conforming
to the required standard

…….
Dr. Vivienne Wilson, MEM Academic Lead
School of Environment and Sustainability

……...
Erik Karlsen, Associate Faculty, Project Supervisor
School of Environment and Sustainability

ROYAL ROADS UNIVERSITY
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**Abstract**

Financial resources have become a significant constraining factor in the effective management of parks and conservation areas, resulting in escalating challenges to maintaining ecological integrity. In the Mount Arrowsmith Biosphere Reserve on east-central Vancouver Island, British Columbia, rapid growth and development are increasingly degrading the health of the few small and fragmented protected areas that exist. Integrated regional conservation management and a strategy to nurture a conservation ethic are necessary to solve the funding problems and ensure parks and conservation areas are well cared for. When revenue generation mechanisms adhere to a set of sustainability principles, they can supplement insufficient protected area budgets and act as catalysts for institutional integration, new environmental legislation and the development of a valuable conservation economy.

**Acknowledgments**

The successful completion of this thesis project can be attributed to the kindness and commitment of many willing research participants, most of whom gave several hours of their time to share their views and knowledge. I am grateful for their contribution to this work and also for the many hours they have served conservation and their communities. I am appreciative to all who shared articles, documents and suggestions, and to Glen Jamieson and Tom Sohier for their maps of the biosphere reserve.

I apologize to potential participants within the project scope who could have contributed valuable information to this project but were excluded purely due to time constraints. This work has been developed as a foundation for further dialogue. I welcome every reader to challenge its interpretations and to add their own.

I am grateful to Blair Hammond and Stan Boychuk for their thought-provoking and inspiring communications which were instrumental in helping me formulate my own vision and strategy for the future. Neil Dawe provided helpful articles and thoughtful comments. Brian Springinotic volunteered precious time to review my preliminary work.

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My supervisor, Erik Karlsen, patiently walked me through a process of what can only be described as “enlightenment” which was as valuable to my intellectual growth as the thesis research itself. He exhibited extraordinary insight, commitment, attention to detail, and a coaching skill which pushed me beyond several layers of self-imposed resistance. Much of the quality of this document can be attributed to Erik Karlsen.

Finally, the following quote has served as a frequent reminder of the overarching goal to which this thesis is meant to contribute.

*If future generations are to remember us with gratitude rather than contempt, we must leave them more than the miracles of technology. We must leave them a glimpse of the world as it was in the beginning, not just after we got through with it.* (U.S. President Lyndon B Johnson, 1964)

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## Introduction

This thesis explores the challenges associated with funding conservation[1] management for ecological integrity[2] in parks and conservation areas in Mount Arrowsmith Biosphere Reserve (MABR). It melds knowledge and perspectives from the literature, the researcher, and interviews with participants to inform a principle-based model and strategy and options for revenue generation (reported in Appendix A) to achieve financial sustainability[3] for protected natural areas[4] in the region.

### *The Thesis Question*

The primary objective at the onset of the project was to assess how revenue generation mechanisms could be used to achieve financial sustainability for protected areas. The thesis question was later restructured to better reflect research needs, to examine *how financial sustainability for parks and conservation areas can be achieved to meet conservation management objectives and the growing social and economic needs in Mount Arrowsmith Biosphere Reserve.*

### *The Value of Protected Areas*

Protected natural areas have extraordinary value. A third of the world's largest cities draw their drinking water from protected areas. Many species would not exist without them. They are increasingly recognized for their important role in mitigating climate change, not only by sequestering carbon and buffering severe climatic events (Mulongoy & Chape, 2004) but by acting as benchmarks against which we can evaluate change. They are repositories of invaluable biological and ecological information and

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[1] Conservation is the application of ecological principles to maintain, enhance, rehabilitate or restore natural values.

[2] Areas have ecological integrity when the structure, composition, and function of the ecosystem are unimpaired by stresses from human activity; natural ecological processes are intact and self-sustaining; the ecosystem evolves naturally and its capacity for self renewal is maintained; and the ecosystem's biodiversity is ensured by taking into account natural successional changes (BCIT, 2004).

[3] Protected area financial sustainability is the capacity to secure stable and sufficient long-term financial resources, and to allocate them in a timely manner and appropriate form, to cover the full costs of protected areas (both direct and indirect) and to ensure that protected areas are managed effectively and efficiently with respect to conservation and other objectives (IUCN, 2005).

[4] Since there are more than 1000 terms used globally to designate protected areas (Mulongoy & Chape, 2004); for the sake of simplicity the term protected area will be used to describe parks and conservation areas with significant portions left more or less in their natural state.

ecosystem services critical to a sustainable future – society's insurance policy against catastrophic environmental fluctuations. For some indigenous peoples, they are the only spaces left where they can continue traditional lifestyles. The social importance of protected areas for our physical, mental and spiritual well being cannot be understated; they are often the only places people can get away from vehicle exhaust and urban noise. And visitation pumps billions of dollars into the global economy each year.

Yet these precious areas are typically managed with budgets that are inadequate to ensure that conservation objectives are met (Quintela, Thomas & Robin, 2003). Without adequate support, protected areas are vulnerable to disturbance, degradation and removal of natural values, as well as encroachment, overuse, invasive species, pollution and drawdown of freshwater. Ecological integrity is compromised with incremental habitat loss, declining populations and diminishing biodiversity and eventually collapses with loss of life-sustaining processes and species. Communities lose vital ecosystem services such as nutrient cycling and water filtration. The quality of educational and recreational opportunities diminishes, along with personal, social and economic benefits. Doppelt (2003, p.40) said "sustainability is about protecting our options, requiring humans to live and work in ways that can be maintained for decades and generations without depleting or causing harm to our environmental, social and economic resources". If we can't do that in our protected areas, where can we do it?

***Why is it so difficult to finance the management of protected areas?***

The answer to this question is multi-faceted.

- Perhaps the most compelling reason is the perception that natural areas are "unproductive" parts of the landscape (B. Hammond, personal communication, January 8, 2004). They have opportunity costs, tying up resources which could be used for endeavors which are more profitable in the short-term, such as waterfront developments. Ecosystem services provided by intact natural areas, such as soil and water conservation, are undervalued[5] and generally fall outside formal markets (Mulongoy & Chape, 2004).

[5] See Appendix B for a further examination of environmental valuation, the nature of public and private goods and willingness to pay.

- Because their economic effects are mostly indirect, governments do not see protected areas creating jobs in the same way they do mining or forestry (Lindberg, 2001). Tourism has been viewed as a market driven service industry rather than a natural resource based activity (Ethos Environmental, 1988). Conservation management in Canada is not an important source of jobs and income as it is in some countries; in Britain for example the nature conservation sector is a significant and growing employer credited with boosting formerly stagnant rural economies, supporting 10,000 direct jobs and 4-6 times more indirect jobs (Birdlife International, 1997).
- Conservation goals have not been given sufficiently high priority relative to other government priorities in Canada (National Roundtable on the Environment and the Economy [NRTEE] (2003); pressing demands from health and other sectors are more effective at capturing government revenue.
- Scarcity of protected areas does not drive up user fees in the same way that diminishing oil reserves “fuel” price increases.
- The relatively few dollars that are spent on conservation go to acquisitions or covenants to “save” lands from development.
- The literature review and interviews also suggest that although people want to believe their rich natural heritage is safeguarded in the protected area system, it is often not the case. Some harbour misconceptions that management is unnecessary or inexpensive.
- A long history of under-funding has even convinced some managers that basic tools such as management planning, inventories and monitoring of conservation values are luxuries.

Society is far from convinced that parks and conservation areas are valuable assets and people should pay for their ongoing protection. Clearly these challenges need to be addressed if conservation management is going to receive the attention needed to sustain protected area ecosystems for the well-being of our communities and future generations.

### *Significance of the Research*

Biosphere reserves are intended to demonstrate the reconciliation of people and nature with conservation and sustainable development (MABR, 2001a; Canadian Biosphere Reserves Association [CBRA], 2005) yet Mount Arrowsmith Biosphere Reserve's core protected areas are under threat by rapid growth and development. To rely on current systems and traditional funding for management is likely to put the long-term viability of these natural areas at risk. However, revenue generation associated with the use of parks and conservation areas has been insufficient and unpopular. Environmentalists in particular are concerned that ecological integrity will be compromised with finance mechanisms in place, yet the reverse is true; ecological integrity may not be maintained without adequate funding (World Conservation Union [IUCN], 2000). The findings of this case study will provide insight and direction for protected area managers in MABR and other regions experiencing funding challenges.

## Methodology

This study was exploratory and qualitative in nature. Semi-structured interviews with protected area managers, government and community leaders, representatives of user groups and other stakeholders were used to examine existing relationships and ascertain perceptions on conservation management and revenue generation in and around the study area. Interviews were conducted in-person, and when necessary by telephone and email. Appendix C lists project participants and Appendix D outlines the types of questions asked. Protected area management plans for the study area were reviewed, and an extensive global literature review undertaken.

In response to a need expressed by protected area managers, the primary objective at the onset of the project was to *assess how on-site or community-based revenue generation mechanisms could be used to meet management objectives on parks and conservation areas in the Mount Arrowsmith Biosphere Reserve without compromising the ecological integrity of those areas or growing social and economic needs.* Interview questions had been structured to enable an understanding of funding systems and an effective analysis of how revenue generations would "fit" within them. From the time of the first interviews, it became apparent that the cart had been put before the horse. New revenue generation mechanisms would likely flounder irrespective of their merits, due to the systemic origins of funding problems. The thesis question was then restructured to take a broader approach.

Early in the interview process, it became evident that the simple recording and empirical summary of the answers would not do justice to the nature, depth and quality of the information received. The questions in effect stimulated a discussion, which took on more of a consultative interaction and effectively contributed to the final model and strategy presented in this thesis; thus the term "project participant" was a more appropriate description of an "interviewee". As the interview schedule progressed, discussions focused on identifying and filling information gaps.

In order to depersonalize issues and protect project participants from negative repercussions, most interview data were reported anonymously in the body of the thesis. The report focuses on three issues which generated the most interest during interviews, i.e. the BC government funding model (the primary issue), the emotional connection

between people and protected areas and implications for funding, and whether parks pay for themselves. As the main revenue generation component of the government model, user fees were assessed in some depth. Where possible, a *SWOT* analysis was used to identify the *strengths, weaknesses, opportunities and threats* associated with other mechanisms. From these assessments, a set of revenue generation principles was developed. All findings were used to create a regional conservation management and funding model for MABR.

### *A Community-based Approach*

The study employed a community-based approach focused on MABR which involved consultation and partnerships among stakeholders; integrated environmental, economic and social objectives; and attempted to forge long-term solutions at the community level (U.S. Environmental Protection Agency, 2004). It is rooted in the idea that a natural area, in order to function well, and be well cared for, has to be an integral part of the cultural fabric of a community (B. Hammond, personal communication, January 8, 2004). There are other reasons to pursue a regional case study as well. Protected area conservation costs vary considerably by region and are positively related to economic development levels, population pressure, and degree of protected area fragmentation (James, Green & Paine, 1999), all of which are amplified in MABR.

### *Additional Points on the Scope of the Research*

The following points further define the parameters of the research:

- As the recreation aspect of protected areas is intimately tied to conservation management, it is an integral part of the study.
- Revenue generation options (which are fully described in Appendix A) are primarily on-site or community-based mechanisms. Traditional funding by governments and foundations and direct solicitations for donations are only briefly examined for their role in various funding models.
- Business logistics such as planning for increases to staffing and equipment purchases were outside the scope of this study but are absolutely essential. It is imperative that revenue generation mechanisms be economically justifiable.

**The Study Area – Mount Arrowsmith Biosphere Reserve**

MABR's official boundaries coincide with several watersheds that drain Mount Arrowsmith, Mount Cokely and Mount Moriarty on east-central Vancouver Island. Thus a wide range of ecosystems are represented in the 79,300 ha reserve, from alpine to marine estuaries. Oceanside is an area on east-central Vancouver Island encompassing the City of Parksville, Town of Qualicum Beach, and a large portion of the Regional District of Nanaimo (RDN). Its boundaries roughly coincide with those of the biosphere reserve.

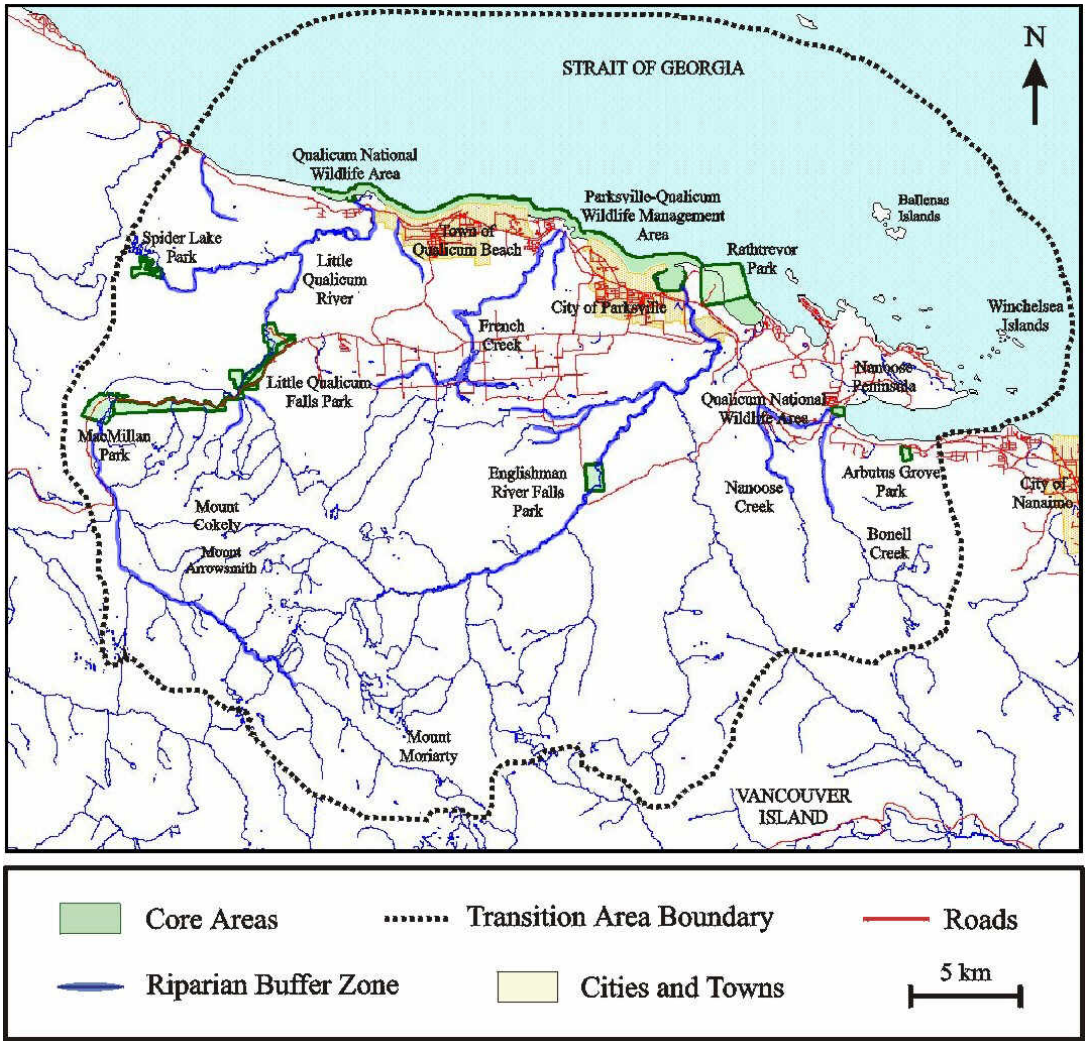


Figure 1. Mount Arrowsmith Biosphere Reserve. The core areas do not include all of the protected areas in the region (Copyright © Jamieson (n.d.), reprinted with permission).

Biosphere reserves are ecosystems which are internationally recognized within the framework of United Nations Educational, Scientific, and Cultural Organization

(UNESCO) as sites to demonstrate innovative and practical approaches to conservation and sustainable development (CBRA, 2005). A biosphere reserve comprises core areas which have legislated protection and act as reference points to assess environmental quality on the rest of the reserve (Fraser, 2002), buffer zones to conserve the core areas and a zone of co-operation (or transition zone) in which human activities and development are considered for their influence on the core and buffer areas (MABR, 2001b). The MABR buffer zone was identified as a 500 m long,15 m wide riparian strip along fish-bearing streams and rivers, most of which is privately owned. The March 2005 *Riparian Areas Regulation* (enacted under the provincial *Fish Protection Act*) has since weakened the *Streamside Protection Act* which had identified the required set back from fish bearing streams (West Coast Environmental Law Society [WCEL], 2005). Prior to recent acquisitions, a whopping 98% of MABR was in the transition zone, which is almost entirely privately owned and heavily impacted by human activity (Sian, 1999; The Tourism Company, 2004).

Today, MABR protected areas consist of ~2500 ha of terrestrial and estuary lands, not including marine foreshore of ~800 ha in the Parksville-Qualicum Beach Wildlife Management Area (PQBWMA), representing roughly 3% of the total reserve. There are national, provincial, regional and municipal government parks and conservation areas as well as conservation areas owned or covenanted by non-profit land trusts (See Table 1).

Table 1. Protected areas of Mount Arrowsmith Biosphere Reserve. There may be others with a registered interest on title. Missing are community and municipal parks, Qualicum Bat House, and small conservation covenants on private lands.

| **Protected Area** | **Year est.** | **Ownership; Management** | **Area (ha)** |
|---|---|---|---|
| Arbutus Grove Provincial Park | 1966 | Provincial Crown; Ministry of Environment | 22 |
| Englishman River Falls Provincial Park | 1940 | Provincial Crown; Ministry of Environment | 97 |
| Little Qualicum Falls Provincial Park | 1940 | Provincial Crown; Ministry of Environment | 440 |
| MacMillan Provincial Park (Cathedral Grove) | 1947, 2005 | Provincial Crown; Ministry of Environment | 280 |
| Rathtrevor Beach Provincial Park | 1967, | Provincial Crown; | 348 |

| | | | |
|---|---|---|---|
| | 1969 | Ministry of Environment | |
| Spider Lake Provincial Park | 1981 | Provincial Crown;<br>Ministry of Environment | 64.59 |
| Qualicum National Wildlife Area: Nanoose Bay Unit | 1977 | The Nature Trust of BC;<br>Canadian Wildlife Service.<br>Agreement with Ducks Unlimited Canada to manage hayfields | 34 |
| Qualicum National Wildlife Area: Marshall Stevenson Unit | 1974 | Federal Crown;<br>Canadian Wildlife Service | 29 |
| Beachcomber Regional Park | 1955 | Regional District of Nanaimo | 1.04 |
| Englishman River Regional Park | 2005 | The Nature Trust of BC;<br>Regional District of Nanaimo | 173 |
| Little Qualicum River Regional Park | 1998 | Regional District of Nanaimo | 44 |
| Little Qualicum River Regional Conservation Area | 2003 | Co-ownership and management by Regional District of Nanaimo and Ducks Unlimited Canada | 4.6 |
| River's Edge Regional Park | 2003 | Regional District of Nanaimo | 21.4 |
| Mount Arrowsmith Regional Park | | Alberni-Clayoquot Regional District | 515.58 |
| South Winchelsea Island | 1998 | The Land Conservancy;<br>Covenants held by Nanaimo Area Land Trust and Islands Trust | 10.4 |
| Top Bridge Nature Trust Lands | 1978 | The Nature Trust of BC;<br>City of Parksville | 0.6 |
| Nature Trust - Timberwest South Englishman Conservation Covenant | 2005 | Timberwest;<br>Covenant held by The Nature Trust of BC | 8 |
| Peace Abide Park | 1975 | The Nature Trust of BC | 3.2 |
| Craig Creek Riparian Corridor | 2004 | The Nature Trust of BC | 12.2 |
| Dudley Marsh | 1982 | The Nature Trust of BC;<br>Ministry of Environment.<br>Ducks Unlimited Canada maintains licensed control structure | 32.4 |
| Englishman River Block 564 | 2003 | The Nature Trust of BC;<br>Ministry of Environment | 93 |
| Englishman River Estuary<br>5 parcels | 1981-1992 | The Nature Trust of BC;<br>Ministry of Environment.<br>Part of Parksville - Qualicum Beach Wildlife Mgmt Area | 76.71 |
| Parksville - Qualicum Beach Wildlife Management Area | 1993, 2001 | Provincial Crown and The Nature Trust of BC;<br>Ministry of Environment | 1029 |

Nearby Clayoquot Biosphere Reserve was designated in January 2001, two months after MABR was designated, the culmination of a lengthy and very involved and evolving community process. Since then, the governing Clayoquot Biosphere Trust (CBT) has accomplished a great deal, largely due to a $12 million federal endowment. By comparison, MABR was designated without community grounding and wholesale approval of stakeholders. Like most biosphere reserves in Canada, it has no core funding and is run by volunteers with limited capacity to develop sustainability projects or participate in nation-wide initiatives such as monitoring for climate change.

Today, there is little awareness that the biosphere reserve even exists. Even the local MLA did not know that the biosphere reserve was in his riding. Individuals responsible for the care of most of the core protected areas know little about the biosphere concept. In contrast, Pacific Rim National Park Reserve has an ongoing relationship with the CBT as part of the board, by helping with the interpretation of the biosphere, and through partnerships at community events. The CBT also participates on parks research committees, and works with BC Parks and Parks Canada to negotiate with forestry companies to address external impacts and the tourism industry to promote awareness around species at risk. Additionally, the Trust provides some funding and management assistance to the Tofino WMA.

***The Past: Implications of the ENR Land Grant***

In 1883, coal baron Robert Dunsmuir signed an agreement with the federal government to construct a railway on Vancouver Island for $750,000 and a land grant of almost 2,000,000 acres. To promote settlement, provision was made for the sale of farmlands to homesteaders at one dollar per acre. As a result, most of this part of Vancouver Island is privately owned.

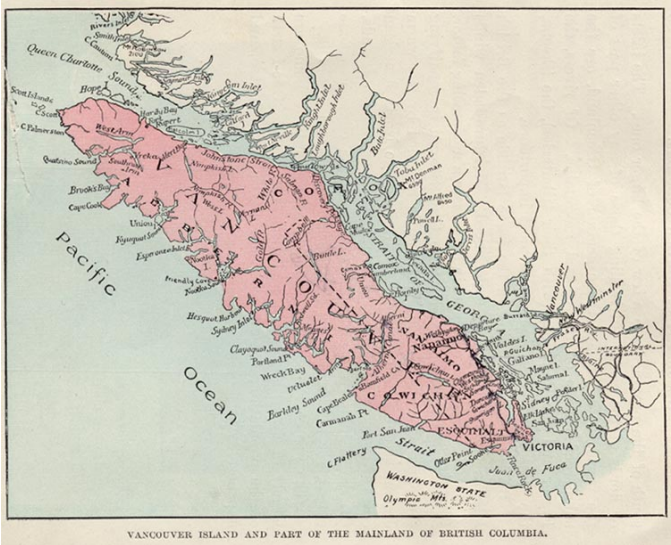


Figure 2. The ENR land grant. The dotted line down the middle of the Island delineates the massive tract of land given to the Esquimalt and Nanaimo Railway Company (Lawson & Watson Young, 1913; Copyright © vihistory.ca, Malaspina University College, reprinted with permission).

The implications of this history are significant for conservation. Protected areas were typically created by trades for resource extraction privileges or when publicly utilized private lands were threatened with development, with little consideration for ecosystem representation, species at risk or critical habitats. As a result, many protected areas are too small to provide habitats for species they once might have supported, and too fragmented to provide for wildlife corridors and for natural migration to balance local extinctions, therefore they cannot maintain ecological integrity on their own. And because most protected areas in the region are surrounded by human environments over which managers have little or no control, these remnants are vulnerable. Impacts to watercourses and aquifers from development, pesticides and toxic cleaning products are major concerns. Clearing for views is a frequent problem. Unwanted access often occurs with ATVs, poaching (elk, deer) and collection (of salal, mushrooms), dumping of compost and garbage, fire and vandalism. Accelerated windthrow resulting from bordering clearcuts and trespass from logging are occasional management issues.

As more private land with wetlands, forests and access to foreshore succumb to housing and asphalt, there is increasing pressure on the few publicly accessible protected areas that remain. Horse riders and mountain bikers may not realize the extent of their

damage to trails, which can be significant. Departures from trails, sometimes because of poor maintenance, lead to wildlife disturbance and habitat damage in the form of trampling, erosion and spread of invasive species. Beachgoers wreck havoc on sensitive and valuable eelgrass beds. Smokers pose a serious fire threat during high fire hazard summers. People pick wildflowers, some of which are never seen again on that site. Some collect starfish and shells that are habitat for marine animals. Although people are more aware of the impact of dogs on wildlife as a result of a Black Brant education program, they are generally insensitive to their own damaging effects. Heavy use often leads to overburdened facilities and pollution (i.e. water, air, noise, litter and other waste).

Managing to mitigate the adverse effects of public use is expensive. Management plans are often necessary. Liability insurance is a major cost for land trusts. Channeling access with clear-span bridges, trails, gates, fencing and signage are all critical to maintaining conservation values. Enforcement of regulations has been neglected and is sorely needed. Greater damage necessitates greater management and reclamation costs.

***The Future: Thresholds and Cycles***

The study area is a rapidly growing retirement and tourism destination. The RDN's population is projected to increase by 45% between 2001 and 2025 (RDN, 2005a). The City of Parksville, with a population of 11,479 (2004), reported that building permit values for the past 5 years averaged around $19,170,000 per year. More than 500,000 people are expected to visit Oceanside in 2006. The Oceanside Tourism Association (OTA) estimated that tourists spent in excess of $62,000,000 and more than 1000 people were directly employed in the tourism industry in 2002 (City of Parksville, 2005). More recently, tourism revenues increased by 10.5% from 2004 figures compared to a provincial average of 1.7% (Vail, 2005, September 30). Tourism and new housing are extremely important to the economic development of Oceanside.

There is a misconception among the tourism sector that the threshold of visitor satisfaction or the "quality recreational experience" would be compromised before any significant ecological damage occurs (New Zealand Parliamentary Commissioner for the Environment, 1977). Furthermore, scientists have identified a different threshold, a

"threshold of disturbance", beyond which ecosystem damage is irreversible and any human activities dependent on it are unsustainable (Karr & Chu as cited in Rees, 2000).

Parpairis (Copyright © 2004, reprinted with permission) described a 30 or 40 year tourist area life cycle model which can be used to assess recreation use in general. It is similar to an earlier model (Figure 3) illustrated by Butler (1980).

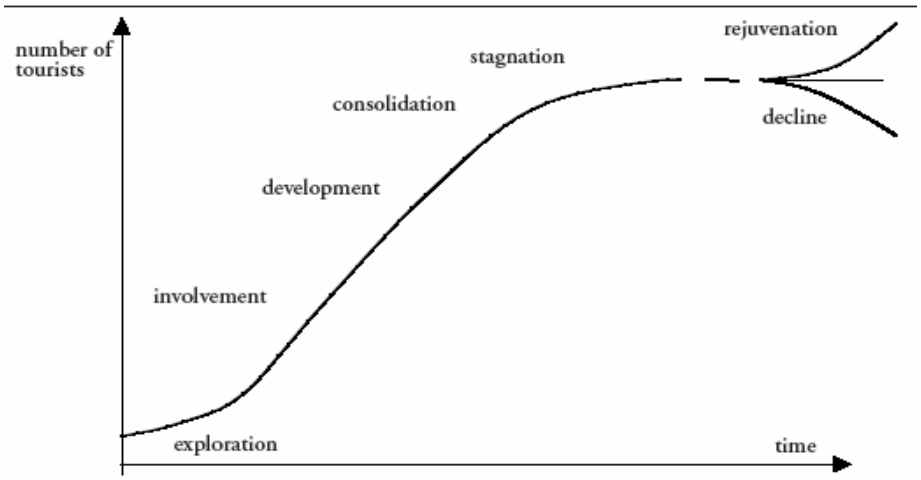


Figure 3. The tourist area life cycle model
(Butler, 1980; Copyright © Blackwell Publishing, reprinted with permission)

As tourism develops, there is little damage and free access. The consolidation or *maturity and stability* phase is characterized by overload capacities, spatial competition, specialization of tourism, environmental damage and increased environmental concern. Rapid and poorly controlled development endeavors to keep pace with visitor demands. Tourism success threatens the quality of environmental resources. The stagnation or *fatigue and saturation* phase is distinguished by intensive planning and management concern and rigid controls as people recognize that tourism is depleting and damaging environmental resources. The final stage involves a restructuring of the tourist product, development of new forms of eco-soft tourism, substitution, and environmental therapy (Parpairis, 2004; Batra & Kaur, 1996). In Oceanside, environmental concerns might be overlooked until a stagnation stage is reached – a stage that does not need to happen.

## The Present: Conservation Management Funding Scenarios

### *Funding for Land Trusts and Stewardship Groups*

Funding for Environmental Non-Government Organizations (ENGOs also noted as NGOs below) - private land trusts that acquire and manage lands, and stewardship groups that perform enhancement and other work on those lands traditionally comes from government grants, interest on endowment funds, foundation grants and fund-raising (e.g. charitable donations). While government funding has declined, low interest rates and volatility of world markets have affected endowment funds. Competition is fierce. Donations are steadily dropping. Fewer public and private funding sources are providing support for shorter periods and with greater restrictions (Scott, as cited in van Drimmelen & Nelson, 2004). Nearly all financing is directed towards short-term conservation activities, rather than long-term management costs (Conservation Finance Alliance (CFA, n.d.). Organizations may spend an inordinate amount of time vying for funding, and some are folding or having to change their mandate to accommodate foundations and donors.

Project participants emphasized that management money is the hardest money to get. For land trusts, priorities are placed on more dire acquisition funds and mortgages which have to be paid. Support tends to wane after acquisitions have been completed, as donors prefer to fund acquisitions and do not understand what management entails and its real costs. As a result, land trusts can afford to address only what is urgent rather than what is necessary. One participant commented “I think there’s a horrible expectation of charities to be able to work on nothing.”

> We think of these groups as charities, and in our minds we may have this image of a grassroots organization that operates on a shoestring, without much expertise, but lots of passion, working ‘for the cause’ every hour of their life. Passion is vital, but not sufficient. There is no requirement of poverty or amateurism (B. Hammond, personal communication, January 8, 2004).

Some participants stated that an increasing number of properties and fewer dollars have forced NGOs to re-evaluate how properties are managed. And more NGOs are adopting a business approach, with sustainability as the main objective rather than profit. The Land Conservancy has led the way with *TLC Enterprises*, a for-profit company that donates to the non-profit entity. The company, modeled after Britain’s National Trust,

supports many revenue generation initiatives such as conservation holidays and product sales, and can take risks that the non-profit cannot.

***A New Model: Privatization, User Pay, Third Party Funding and Volunteers***

In early 2003, the BC Government unveiled a new model for park recreation designed to reduce the Province's financial obligations for O&M and increase the range of recreation activities available (Birch, 2004). Former Sustainable Resource Management Deputy Minister Jon O'Riordan described it as a plan to devolve government's responsibility for resources to the private sector, which "will protect the environmental resources on the land because it is a business investment" (O'Riordan, as cited in Dobson, 2003, p. 14). The notion was not unique to BC. Governments around the world have looked to reduce funding and services by developing commercial operations in protected areas and through associations with the private sector (Productivity Commission, 2001). According to research participants, the Province has made it clear that a single entity like Ministry of Environment (MOE) shouldn't be solely responsible for the environment, as it is a societal benefit and a societal responsibility. Interviews revealed that all governments are looking to non-profit groups and volunteers to ease funding commitments for conservation management. One participant commented that town councils think nothing of spending a million dollars on a road, but if they have to pay $7000 for trail improvements, they look to NGOs and volunteers.

***Funding cuts.***

Between the mid-1990s and 2000, the Ministry of Environment, Lands and Parks (MELP) staff level was reduced by 50% and the budget by ~$50 million, effectively curtailing field work, enforcement, inventory and research (Murray, 2000). In 1985, the Parks budget represented 0.5% of the provincial budget in BC; by 1998 this had dropped to 0.15% (Deardon & Dempsey, 2004). A new government in 2001 further reduced MWLAP (now MOE) staff and cut budgets by an estimated 34%. Outreach and interpretive programs were eliminated (Burgess, 2002). By 2004, there was a $40 million backlog in maintenance (Barisoff, 2004, April 23).

Cooper & Vargas (2004) describe a threshold called a "minimum organizational capital level". At this point, the agency is in serious danger of being unable to carry out its basic obligations at all. The condition exists in situations where the government

agency has been "hollowed out", meaning that its internal levels of personnel and resources have been reduced through extensive layoffs and contracting out of programs. The authors cite Walkerton's E. Coli as an example of what happens when there are no "slack resources".

Like the Recreation Stewardship Panel (2002) and the Parks Legacy Panel before it (Murray, 2000), the BC Legislative Assembly, Select Standing Committee on Finance and Government Services (2005) recommended the government increase spending to BC Parks for programs and staffing.

Research participants admitted that MOE is now in a position where staff are unable to manage much more funding – even if available - due to FTE (full-time-equivalent) cuts. Early retirement programs have resulted in fewer people who are familiar with the needs of each area. In Region 1 which includes MABR, a staff member dedicated to managing more than 58 Nature Trust of British Columbia (TNT) properties and Crown reserves encompassing in excess of 10,000 ha leased to the Province for management passed on in an accident and was never replaced. The Vancouver Island Wetlands Management Program (VIWMP) and TNT were forced to take on more of that role.

***Conspiracy theory.***

A "conspiracy theory" has been suggested - that starving parks' budgets has been intentional, designed to make it more justifiable to increase reliance on private interests or donations and volunteers to carry out even basic operational needs (Wade, 2005). However, the proportion of public funding going into protected areas is in decline in many places. "Paper" or "press-release" parks can be found from the developing tropics and Europe to Vancouver Island, created with much fanfare but lacking any budget or management (Boyd, 2003; IUCN, 2000; World Wildlife Fund [WWF] European Forest Programme, 2003). Across Canada, the National Roundtable on the Environment and the Economy found "resources dedicated to conservation (were) clearly insufficient" (NRTEE, 2003, p. 41). Parks Canada experienced a 25% decrease in budget allocations between 1994 and 2000, at the same time a legislated ecological integrity mandate brought many new responsibilities (NRTEE, 2003).

A project participant reported that the Canadian Wildlife Service (CWS) had an annual budget of $15,000 and one person-year to manage five National Wildlife Areas and seven Migratory Bird Sanctuaries. CWS cannot access other federal funding programs such as the Habitat Stewardship Program for Species at Risk, so managers use creative approaches through third parties to carry out their conservation projects.

Many factors have contributed to the current funding climate for conservation in MABR. In 1993, the Province embarked on the Protected Area Strategy, a response to the 1987 Brundtland report *Our Common Future* which called for 12% of the land to be given protected area status (Mulongoy & Chape, 2004). From 1991 to 2001, the protected land base in BC went from 5.74 to 11.86 million ha (MWLAP, 2002), diluting BC Parks' ability to effectively manage protected areas. Another limiting factor is the provincial debt, which was ~$37 billion at the end of 2004. Shifting demographics suggest that there will be progressively higher costs and a smaller labour force to meet those costs (Ministry of Finance, 2005).

***Outsourcing.***

Outsourcing is a hybrid between full public service and complete privatization where contracts allow for periodic review of performance. Salaries, which typically make up two thirds of an agency's budget, are downloaded to the contractor, who has incentives and flexibility to find cost savings and to innovate. Yet outsourcing fails to place any value on the expertise and institutional knowledge of the park professionals who did the job previously (Productivity Commission, 2001). More (2005) calls outsourcing a "sharp pencil" problem, one requiring careful calculation to determine whether there will indeed be significant savings to the public. For one thing, contractors must make a profit which is unnecessary in the public system, so paying it can raise the total provision cost. Contractors often rely on low wage employees with few benefits who pay lower taxes and may generate more social costs in the long term.

According to research participants, provincial park management has been outsourced to private contractors for many years. In 2003, park contracts in MABR were changed to park bundles with 10 year terms, as there was no longer enough staff to take care of the many contractual agreements associated with the previous system. Bundles have not solved the problems of contract management capability; Parks staff are simply

too busy. Osprey Park Operations, the PFO in charge of 2 out of 3 Vancouver Island bundles including 35 parks in the mid and north island, is held accountable to a provincial standard regardless of its bottom line. PFOs must adhere to a list of acceptable activities for revenue generation, and if they accrue increased revenues, the additional monies are considered in the next contract renegotiation and a percentage returned to the Crown. Provincial Parks staff are primarily responsible for most conservation activities, while PFOs are responsible for maintaining known conservation values.

***Privatization.***

While most project participants didn't want to see the park system as a for-profit organization, many of them were convinced that the Province was headed in that direction. Privatization can be a subtle process, a series of intermediate steps, each of which moves the parks a bit further from the fully public model towards the private. These include outsourcing, user fees, public-private partnerships, and the use of the business vocabulary, such as referring to park visitors as customers or clients. After each step, the public is given a chance to adapt (More, 2005).

The U.S. Property and Environment Research Center (PERC,1999) advocates for privatization and user fees in parks, since low or nonexistent fees discourage private recreation areas. In Costa Rica, public protected areas have flourished alongside private reserves with ecotourism facilities the government could not afford to provide (Brown, 2001). In Texas, the move to park fees may have spurred private landowners to pursue ecotourism ventures rather than succumb to the lure of real estate development (McLintock, 2005).

Yet there are many examples where the benefits have been privatized but the costs have been left to the local community (McPhail, as cited in Dobson, 2003). When Ontario cut its protected area budget, the parks system was overhauled to operate more like a business, with privatization of services, corporate partnerships, and a high profile marketing campaign to increase visitation. Parks staff participated in entrepreneurial skills and customer service training. Only park activities directly connected to economic gains were found to benefit from the shift to a business approach, while other values including ecological integrity and education suffered (Deardon & Dempsey, 2004).

Privatization creates the incentive to provide services that are valued by visitors, to the detriment of conservation. The average person may not be able to readily see whether an ecosystem is healthy or has ecological integrity. On closer inspection there may be few fish in the streams, many of the animals that historically used the area are gone, and most of the plant and animal species are introduced. Also, private companies are motivated to maximize their customer numbers, with little thought to ecological limits.

***User pay.***

Governments make the case that fees cover private goods (i.e. consumption of recreation) while taxes provide public goods such as conservation. Interviews suggest that it is debatable as to how separable recreation and conservation really are. Some projects for recreation inevitably have benefits for conservation and vice versa. Fencing to prevent people from trampling sensitive vegetation is considered recreation spending, for example. The blurring of recreation and conservation funding is furthered by the crossover between park and non-park spending. However, conservation and recreation do compete for funding. One of the intentions of the user pay model was to free up funding for conservation from general allocations, but this hasn't materialized. Recreation spending - especially expenditures to address public health and safety – often takes priority because of liability, while conservation spending tends to be more discretionary unless an immediate threat emerges, such as invasive burrweed.

According to research participants, it is Parks staff who suggest fee modifications and drive the rigorous process of fee approval, convincing the Minister and Cabinet that changes are appropriate. Staff were seeking a collection method that would be easy to implement, would return as much revenue as possible to the system without losing it in administrative costs, and have wide user support as indicated by high compliance.

When parking fees were established in 41 provincial parks in 2003-2004, they were expected to return an estimated $2.9M annually (B.C. Parks, n.d.). However, fees are much like regulatory programs, requiring fines, enforcement and a dispute resolution mechanism (Cooper & Vargas, 2004). An internal government audit in early 2004 warned that the Ministry may lack the resources to administer and enforce parking fees (Barlee & Riccius, 2005; Birch, 2004). Since the meters were installed until October

2004, there were 437 warning violations issued in mid-island parks and more than 90% were BC residents (MWLAP, 2005b). Participants indicated that PFOs are presently required to monitor and ticket but have no authority to collect fines. Administrative and maintenance costs have been substantially higher than anticipated. However, Parks staff considered the ~$800,000 net return to government in 2004 a success, and looked to PFOs to bring more people into the parks, which will further increase revenue.

Parks staff are familiar with fee corollaries. Normally after the introduction of user fees, attendance drops so that revenue remains flat and then in following years regains momentum. Rathtrevor Beach Provincial Park, located within the City of Parksville, showed a distinct drop in visitation when parking meters were introduced in April 2003 and lower than usual visitation outside of the tourist season (Figure 4). In 2004, Rathtrevor entertained 91,000 parties, down from 124,000 in 1985 and 132,000+ in 2001. The Community Park served as a substitute, as did TNT conservation lands in the PQBWMA. Tourism BC considered 2003 to be a depressed year in general, due to SARS and the war in Iraq (Tourism BC, 2005a). Drops in visitation have also been attributed to the Sunsmart program in the 90s, a new water park in Parksville's Community Park, the discovery of the deadly fungus *Cryptococcus gattii* in summer 2002, U.S. Homeland Security, and gas and ferry prices. Still the park met or exceeded its capacity in the summer (MELP, 1988; MWLAP, 2005a). Appendix F shows changes in visitor use over the same four year period for three MABR provincial parks, Goldstream Provincial Park near Victoria and Miracle Beach Provincial Park on the north island.

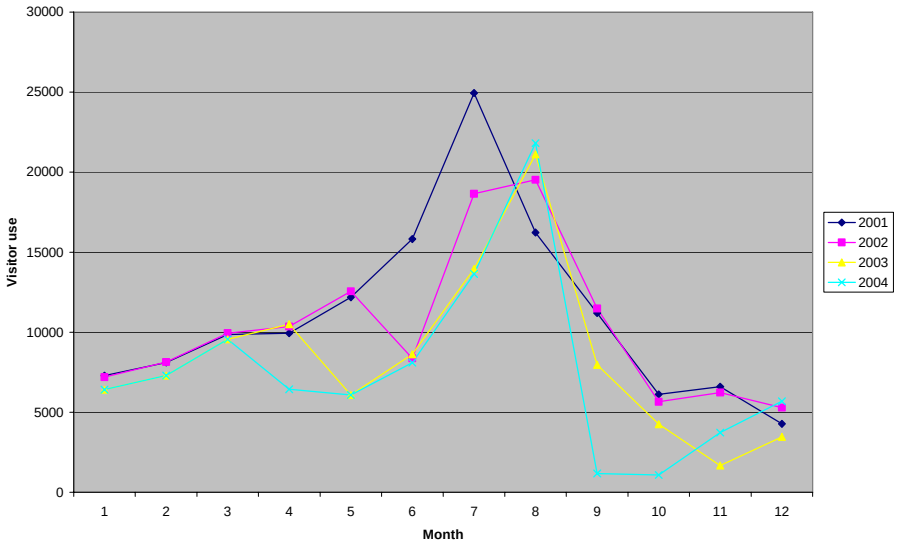


Figure 4. Visitor use of Rathtrevor Beach Provincial Park, 2001-2004.

When parking fees were established, their proponents met considerable opposition. What disturbed many people was the fact that government was cutting park services (e.g. interpretation) at the same time it was introducing fees for park use (National Union of Public and General Employees, 2002).

Project participants, commenting on the public meeting with MWLAP Minister Joyce Murray and MLA Judith Reid which was held *after* the announcement was made, said it lacked dialogue and respect. Parksville Mayor Randy Longmuir (personal communication, June 2, 2005) found parking fees at Rathtrevor Park generated more public outrage than any issue during his tenure. The community park saw increased use by 30-50%, which in turn increased operational costs and likely accelerates replacement costs. The Brant Wildlife Festival moved to the community park, for example. The backlash influenced the graduated fee system we see today ($3-5/day; $1 for first hour, $50 annual pass, reduced fees for qualifying disabled persons and discounted shoulder season rates for seniors). However it was clear that there had been little consideration for the fact there were no other places in the region where you pay for parking or for local vs. tourism impacts. People were not told how the fees would be well used. Many were concerned about the fee adding to health care costs by discouraging people from being active and outdoors.

The notion of user fees motivated research participants to evaluate the purpose of protected areas. One participant commented that “protected areas aren’t about revenue, they aren’t about profit; they’re about sustainability and biological longevity for all of us”. Another thought of parks as our heritage - consistent with BC Parks’ mission statement (BC Parks, n.d.), and for that segment of the population where every dollar counts, parking meters restrict access to that heritage. This is particularly true where the only way to access the park is by vehicle. Fees were seen to preclude traditionally inexpensive activities in the park, which draw families together at a period in time when it is easy to be isolated by TV and the pressures of daily life. In fact, parking meters were much more than a collection box for user fees; they were “a symbol of a shift that says if you have a few extra bucks you can do anything you want, but if you don’t - bugger off”. One participant commented on how easy it is to make decisions that for decision makers have no (negative) impact.

It is easy for governments to emphasize those programs or services that produce the most return and to de-emphasize or even starve those parts of the mandate that return little or nothing, unbalancing a full range policy mix designed to serve the poor or to provide costly infrastructure services which would not be regarded as profitable by the private sector (Cooper & Vargas, 2004). No other class of goods or services provides the number of individual and social benefits that parks can offer. By serving people of all social classes, parks without fees combat a tendency for social stratification and promote a healthy sense of community (Cockrell & Wellman, 1985, in Grewell, 2004). Free passes or rebates for the poor are seen as easy solutions to the equity problem, yet these reinforce social divides; just having to request assistance can be a barrier, particularly among seniors (Harnik, 2003).

If a government plans to operate like a business, it has to learn business skills such as market analysis and strategic planning (Leclerc, 1996). The Capital Regional District (CRD) uses parking fees to manage heavy use at Thetis Lake Regional Park during the summer season. The remainder of the year parking is free. At Utah’s Arches National Park, waivers are available to groups when the purpose of their visit is educational rather than recreational (Arches National Park, n.d.). Implementing sound business decisions should not entail losing users only to generate far less revenue than

anticipated, create uncertain social costs and lead to thousands of unhappy citizens (Leclerc, 1996).

One participant unlocked the potential of empowering the public. She was responsible for coordinating the cost recovery process at Gwaii Hanaas National Park Reserve and believed that public support would be forthcoming only if the residents had a good understanding of the issues, costs and benefits. To the public, she said “here’s what we have been told we have to do, we can’t choose not to do it, here is the reasoning, here are our financial numbers and you tell us how to do it”. The process was time consuming but inexpensive, with facilitated meetings in every community using handwritten materials and flip charts. The community came up with some creative solutions, finally settling on the user fee structure in place today. The fees have widespread community support, and some of their best defenders were wholly against user fees at the beginning of the process.

***Third party funding.***

Project participants revealed that at one time there was a million dollars of provincial base budget each year for conservation projects; since the election of a new government in 2001 it has been reduced to zero. Some operational budget dollars become available for conservation projects but there is no longer a central pot of money identified for conservation. The new model is “go to a third party” - some of which are other provincial government entities - such as Habitat Conservation Trust Fund (HCTF) which mainly consists of fishing and hunting license surcharges, or Ministry of Forests Forest Investment Account for conservation research projects on forest lands. MOE has been encouraged to proactively partner with and offer expertise to individuals and groups who can leverage funding and achieve conservation goals. NGO participants can very effectively build on seed money from every level of government. Land trust-government partnerships have allowed decisions to be made with government by people, rather than decisions being made by government on behalf of the people. What's more, personal investment and involvement has come through the land trust.

Most research participants believed that everyone would benefit from governments making it easier for conservation organizations to do business, through direct support and by exemption from property taxation. McNeely & Weatherly (1996)

stated that the non-profit sector should be encouraged to be as dynamic and innovative as the for-profit sector. The U.S. Nature Conservancy is the epitome of this; in 2002, the organization managed 7 million acres and revenues of $972 million, including $105 million in government consulting fees and other payments (Ottaway & Stephens, 2003).

The downside to third party funding in its current form is that public agencies and civil society, forced to compete for resources, have created competition dysfunctions. Groups avoid sharing information and are reluctant to work together for fear of losing ground to one another or sending mixed messages to potential financiers.

***Volunteers.***

As a grassroots land trust, TLC has successfully enlisted the help of volunteers for surveys and monitoring, maintenance and restoration, interpretation and outreach, office support, fundraising and more (TLC, 2005e). The work accomplished by an estimated 500 volunteers represents cash savings of more than $1 million. People that volunteer with TLC wish to contribute something back to their community, to build job skills and resumes, to keep fit and active, and to meet new people and learn new things, but the common thread is always the notion that they are truly helping to make a difference and a better world around them (Fawcett, 2005).

This is in stark contrast to stewardship on public lands. As opposed to cooperatively sharing a stewardship role with government, interviews revealed that stewardship groups in many cases voluntarily assume management responsibilities and fund conservation activities in protected areas out of necessity or deep concern. Some volunteers were frustrated to have unwittingly become full-time unpaid workers as relied-upon resident experts. Volunteers who had helped maintain trails were unwilling to do more if it meant paying parking fees. This is far from the perception of politicians and bureaucrats who believed that volunteers are delighted to take on the role of stewardship.

Volunteers were acknowledged as a significant valuable resource. But many participants felt it very important that volunteers augment and not supplant professional services provided by government. Volunteers by their very nature come and go at their leisure and are not to be held accountable. They typically lack the holistic view, the background knowledge and formal training to take on work previously accomplished by

professionals. Moreover it is an affront to any professional to suggest he or she could be replaced by volunteers.

A prime example is interpretation and outreach (I&O). COTA (2002) suggested the Province develop high quality training programs to help tourism operators contribute and shoulder some of the costs. Any such initiatives must consider that interpretation is a profession. Park interpreters need scientific training and resources to address complex issues. Professional outreach in schools can present complex environmental scenarios and engage students in developing solutions (Kostantinos, 2001; Townsend, 2003).

And, coordinating volunteer *organizations* to work in tandem was another thing entirely. It was recognized that stewardship groups are often duplicating efforts or working at cross purposes. For those who attend countless advisory committee meetings or must respond to the requests of these innumerable stewardship groups, some coordination would be a relief.

## A Conservation Ethic

Conservation and recreation have long been perceived as conflicting mandates but there is a very compelling reason to resolve the conflict – to awaken what might be the most important role of protected areas today, i.e. to build and nourish support for a conservation or land ethic (Deardon & Dempsey, 2004). The concept of a land ethic was described by Aldo Leopold in 1949; it is essentially an ecological conscience which leads one to strive for harmony between oneself and the environment (Leopold, 1949). Moreover, it is a connection between people and nature that encourages them to view use of the land (including protected areas) as a privilege rather than a right, and prevents them from turning wildlife habitat into asphalt.

Many people believe this missing attribute is a result of limited exposure to nature. If a park or conservation area is not loved by sufficient numbers, it has no hope of being properly resourced (B. Hammond, personal communication, January 8, 2004). One participant referred to Robert Bateman's *Get to Know* program for kids, reiterating "if you have an appreciation for nature, you'll learn to respect it, and you'll take the steps to understand and care for it." A recent *Washington Post* article highlighted millions of dollars in spending for "children's gardens" so that kids can experience (artificially designed) nature (Higgins, 2005).

Outdoor recreation may not in itself lead to a conservation ethic. The need for education, including I&O was stressed by almost every participant. These are labour intensive but cost-effective tools which are integral to nurturing a conservation ethic, reducing incidences of inappropriate behaviour and minimizing environmental impacts (Kostantinos, 2001). In addition, I&O are often effective in soliciting volunteers or donations to support conservation management and research.

In MABR, a conservation ethic is perceived by some to be contrary to economic success and the prevailing culture, with implications for funding of conservation management. A participant said "one major grocery outlet told me (donors) don't touch the environment like they don't touch religion. They say they're in a lot of small communities and they don't want people to think they are supporting anti-logging." Another participant commented "environment is not where the old boys give. We had one that paid for a sign but didn't want his name on it, because he didn't want to join the guys

for coffee and get called a tree hugger. We still get people who donate to things say *I'm not a conservationist, I'm not an environmentalist, but I care about this because my kids go fishing there or I walk there."*

After Provincial park I&O programs were eliminated, Osprey first subsidized its nature houses to the tune of $50-60,000, even with a dollar per person fee for programs. But I&O are not profit centres or even self-sustaining, so a non-profit society was created, supported by a concession, gift shop, and an Art in the Park fundraiser. Osprey's non-profit entity is aggressively targeting foundations for grants and looking for corporate and volunteer support. But volunteers have been slow to get on board, and local NGOs are not impressed with the tack: "now we have additional competition for monies and volunteers that used to be a responsibility of a provincial park".

The Wilderness Tourism Association [WTA](2002), Council of Tourism Associations of BC [COTA] (2002) and others see nature education as a fundamental public responsibility. MacMillan Provincial Park's master plan stated that an interpretation program could be BC Parks' most successful tool to deliver the conservation mandate and protect the park from overuse, vandalism and forest loss (MWLAP, 1992). As a result of parking lot protests, the proposed visitors centre was removed from the plans (MWLAP, 2004, August 9).

Research participants demonstrated that not all education need be expensive. Pacific Rim National Park Reserve maintains displays in each school in their region with free materials from Environment Canada, Fisheries and Oceans Canada (DFO) and others, changing the messages to coincide with Earth Day, Oceans Day, special events or conservation concerns in the park.

Non-profits are finding innovative ways to provide education, and in many cases foundations and donors are happy to help them. TLC has developed outreach materials for children and hosts students on field trips to conservation properties (Gibbard, 2005). Salt Spring Island Conservancy held an intensive ecology day for all Salt Spring middle school students, where they learned first-hand about invasive species, wildlife trees, species identification and how to conduct field research. Mount Arrowsmith Biosphere Foundation's (MABF) lecture series, Salt Spring Conservancy's eco-home tours, Nanaimo Area Land Trust's (NALT) stewardship centre and watershed stewardship

program for private landowners are other examples of successful environmental education programs. Environment-based festivals, which are typically under-supported, provide a venue for education while celebrating nature and community.

Revenue generation mechanisms also can help nurture a conservation ethic. *Conservation Holidays* contribute both funding and labour to conservation management - including monitoring and research, and provide a unique opportunity for people to connect to nature and protected areas. Clayoquot Biosphere Trust's *Biosphere Reserve Passport* is an innovative mechanism designed to encourage people to experience and learn about natural and cultural history.

**Do Protected Areas Pay for Themselves?**

The most frequent argument against provincial user fees is that parks more than pay for themselves through recreation and tourism and should be well funded through general appropriations. The Canadian Parks and Wilderness Society (CPAWS, n.d.) stated that BC Parks adds $45 per hectare to the provincial GDP. In 1996, outdoor recreation in BC generated over $1.9 billion, $1.3 billion of which was spent on outdoor activities in natural areas. Nature-related expenditures contributed over $1.8 billion to the provincial GDP and supported 34,100 jobs. Local and provincial levels of government received $618 million in tax revenue (Environment Canada, 2000). A 2001 study by MWLAP and PricewaterhouseCoopers found that for each dollar invested by government in the protected area system, there was ~$10 in visitor expenditures. The study concluded that parks contributed 9100 person-years of employment and $521 million annually to the provincial economy (MWLAP, 2001). Such calculations are questionable. The input-output model used by the study included induced effects, such as spending on goods and services by employees of the restaurant where the tourist had lunch (MWLAP, 2001).

And saying parks pay for themselves may be like saying schools pay for themselves, or the health care system pays for itself. Schools create more wage earners every year, but parents pay for school supplies, bussing and much more. Healthy citizens pay more into the provincial economy than do the chronically ill, yet there are Medical Service Plan premiums and direct payments to dentists and other health care professionals. Currently, there is no mechanism which indisputably connects tourism and recreation spending with protected areas, nor is there a formula for protected area valuation.

The greatest threat to the integrity of protected areas in Oceanside is nearby development. Negative impacts and management costs escalate with each new tourism marketing campaign and housing development, yet protected areas receive none of the financial benefits awarded to developers, governments, businesses, or residents. *Boundary Taxes* place costs squarely where they belong – with those who profit from protected areas and create the extra burden.


Figure 5. Future development near Englishman River estuary conservation lands

Interviews revealed that camping revenues of ~$11 million fell short by ~$2.6 million in delivering BC Parks' recreation mandate this year. Permit fees for activities in the parks generated some additional revenue. Two percent of ski hill revenues collected from Mount Seymour, Cypress and Manning Provincial Parks ends up as consolidated revenue. If these fees reflected current market values and were retained by Parks, protected areas could indeed pay for themselves. However, these 50 year renewable agreements were crafted during a period of time when skiing was relatively unpopular and private operators were seen as providing a recreation service to park patrons. Barisoff (2004, April 30) and research participants confirm that other BC Parks revenue, such as parking fees and timber sales from prescriptive logging are consolidated into general revenue but are earmarked and allocated to the following year's Parks budget. Revenue targets from those revenues are used to fund Ministry operations. If the targets are not met, Parks is able to maintain the level of operation that year, but there could be impacts in following years. PERC (1977) and participants explained that if there is a bad weather year and visitor numbers drop, the parks are then without money. And although Parks staff assured that traditional budget allocations could not be drawn down with a rise in revenue from user fees, other study participants felt that it could very well happen despite promises to the contrary. WWF (2003) felt it was important to create an independent management body with powers to collect revenue directly, to overcome political suasion.

When fees are retained by a protected area or a protected area agency rather than becoming consolidated revenue, they create a strong incentive to maximize revenue generating activities and cost recovery. Tourists are inspired to pay more if they know the

extra money goes to conservation of the area (Brown, 2001). Communities are more receptive to fees when it is clear that they will receive many of the benefits (Cooper & Vargas, 2004; Lindberg, 2001). The U.S. Fee Demonstration program and State Parks programs which allowed user fee retention experienced both successes and challenges. In Texas and New Hampshire, self-sufficiency in park management led to fee expansions to accommodate capital maintenance backlogs (Grewell, 2004; PERC, 1997; PERC, 1999).

Parks can be made to "pay for themselves" in a variety of ways, each involving trade-offs, i.e. the funding burden will shift from one place, sector or person to another. The remainder of this thesis will focus on minimizing this shift through cost-sharing in the form of integrated management and funding, and redistributing the burden through revenue generation mechanisms that adhere to a set of sustainability principles.

## Revenue Generation Principles

Most protected area managers in MABR have attempted to develop new support strategies through revenue generation, with varying degrees of success. Aside from some of the initiatives described in Appendix A, co-operative agreements with farmers and ranchers were the most common mechanism used by managers. Successful revenue generation was found to be contingent on certain qualities of the mechanism itself, as well as the process of its development and its presentation to the public.

Generally stated, a sustainable revenue generation initiative prioritizes ecological integrity and maximizes economic and social benefits. To meet these objectives, a revenue generation initiative:

- Will positively impact the ecological integrity of the protected area (or cause negligible adverse effects)
- Will be accompanied by further reductions in government appropriations only with a complete restructuring of protected area management (e.g. into a single, integrated management unit with multiple resources)
- Will have a minor footprint, i.e. it does not require a portion of the land base to be cleared or fragmented. Any such initiatives are developed outside of the protected area, either on adjacent Crown land or by private interests with some financial benefit to the protected area.
- Will have a direct connection to conservation.
- Will contribute to a conservation ethic.
- Will enhance or maintain the nature experience.
- Will advance public understanding of the importance of ecological integrity and conservation management in protected areas.
- Will provide significant long-term, stable funding of a known amount.
- Will be economically justifiable, i.e. not require more resources than it will return.
- Will be embraced by the public and other stakeholders.

## A Regional Conservation Management and Funding Model

A new institutional model is required to facilitate and finance effective, enduring conservation management. It draws upon the strengths of existing models described in the literature and the information and knowledge shared by research participants. A comparison with the current BC model follows in Table 2. The provincial model should be noted as an example of one way of managing and funding conservation, not as a model to be held up as ineffective or dysfunctional; this research deliberately focuses on its shortcomings to be able to improve upon them.

### *One Management Unit*

1. First, management is fully integrated within a single, well-defined landscape management unit. The unit is small enough to understand and provide for the unique requirements of each protected area, and large enough to address jurisdictional issues and outside threats arising from land management outside protected area boundaries.

### *An Integrated, Horizontal Structure*

2. Decision-making is neither centralized nor decentralized. Authority is held by a Board or other advisory body which includes representation capable of breaking down jurisdictional, title and tenure boundaries; influencing regulatory and policy decisions on lands within and outside of protected areas; and bridging the disconnect between planners and beneficiaries of new developments and the protected areas which endure the impacts of those developments. In MABR, these might include DFO, CWS, First Nations, MOE, RDN, City of Parksville, Town of Qualicum Beach, TNT, Ducks Unlimited Canada (DUC), Pacific Salmon Foundation, and a Coordinator who oversees professional staff.
3. Management and funding of management is the responsibility of the group regardless of protected area ownership or designation. To ensure the Board is not an assembly of positions, decisions made by the group must not be overridden by an individual's agency or organization (i.e. individuals represent the institution to their organizations, and not the reverse). Members adhere to a well-defined protocol based upon cooperation, equity, and consensus. The protocol is designed to prevent the formation of sectors within the group.

4. Participating organizations and agencies contribute human resources and share management strategies and data. The resultant management team is an integrated assemblage of experienced professionals with a diversity of experience capable of addressing complex conservation and related social and economic issues. The team might consist of hydrologists, biologists, foresters, tourism specialists, urban planners, and community liaisons, for example. They are free to contract with all of the existing capacity in the field, including universities and colleges, foundations, consultants, and stewardship groups.

***A Comprehensive Funding Style***

5. Funding is partially integrated. Core funding from all levels of governments and NGOs are combined into a single kitty in accordance with agreements among participant organizations, but with no strings attached to individual contributors. These and endowment funds are used to leverage project monies from private sector partners, foundations and others. Individual organizations and agencies may be better positioned to raise or apply for certain program funds. The project should be pre-approved by the management team and/or Board. If appropriate, they are free to use the full capacity of the institution to implement the programs, regardless of the funding source.
6. The entity uses a new business approach appropriate for governments and non-profits that doesn't merely mimic a corporate approach or revere privatization – one that strives for cost savings and allows for innovation and reasonable risk taking and investment, but not at the expense of the public good and future generations (i.e. natural capital is left intact). It uses market research and strategic planning to maximize benefits to the public resource and maintain or enhance social benefits. It uses pilot projects to test novel enterprises and policies.
7. A broad portfolio of principled revenue generation mechanisms are implemented, some of which maximize profits with compatible ventures in the region's most traveled and resilient natural areas while preserving the ecological integrity of the most sensitive environments. Some revenue generation initiatives are bold – designed to forge new legislation, develop new sectors in the economy and facilitate a greater conservation ethic.

***Transparency and Accountability***

8. Management and funding is transparent and accountable to attract personal and financial investment in protected areas.
9. A mechanism is created that tracks spending, to demonstrate unequivocally how tourism and recreation benefit from protected areas. An economic valuation formula is developed which proves that protected areas provide real economic benefits to individuals and to society.

***Focused, Integrated Management***

10. Management is guided by a Vision, a set of sustainability Principles, and a goal oriented Strategy designed and agreed upon by professional staff and Board members. The Board and professional staff meet regularly and often to build upon and modify the Vision and Strategy.
11. The management team uses management planning, inventories, monitoring, enforcement, research, interpretation and outreach to accomplish its goals. These are considered tools essential to effective conservation management, not luxuries to be set aside for more prosperous times.
12. Conservation management and recreation management are considered together within the regional protected area network, to distribute use and recreation development to allow for protection of conservation values, ecological connectivity, buffers from potentially damaging activities, and restoration of degraded ecosystems. Limits of acceptable change are defined and monitored, and growth strategies modified to safeguard ecological integrity of parks and conservation areas.
13. Management is dynamic but not ad hoc; systematic planning, monitoring and adaptive management are used to address the complexities of conservation with the help of scientific knowledge, traditional ecological knowledge, and community participation.

***Public Participation with a Purpose***

14. Provision is made for residents and tourists to become involved in protected area management, to experience and celebrate nature and the benefits conservation provides through stewardship, education (e.g. interpretation and outreach, outdoor

classrooms, cultural workshops, research holidays), community events and festivals. There are many opportunities for people to experience protected areas first-hand with conservation experts. A strategy is designed to build a conservation ethic throughout the region which will ultimately prioritize conservation investments and spending, and spill over to planning, development and care of private lands.

15. The utility of stewardship groups and individual volunteers is maximized by financing and professionally designing, guiding, monitoring and integrating their activities.
16. The institution's community liaisons work to effectively empower the public. Community dialogues explore conservation issues in a variety of creative ways, such as conservation or sustainability cafes patterned after philosophy cafes or e-dialogues for credit in middle and high schools. Information sessions facilitate awareness and understanding of Official Community Plans (OCPs) and other plans, processes and policies.

***Outreach Across the Divide***

17. Monies and tools are provided for education and stewardship outreach to address external threats to protected areas such as those originating from poor management practices on private lands or tourism marketing.
18. A mechanism is in place to reward private landowners for maintaining or creating natural protected areas which can function as part of the regional system, and allow access to the institution's management support.
19. Research is conducted to assess and demonstrate the value of integrated conservation management to communities (e.g. the value of lots within the management unit as compared to similar lots outside of it; quality of life surveys).

***Opportunities for Improvement***

20. Knowledge is shared among regions operating under different strategies to allow successes to be emulated and challenges to be avoided.
21. The opportunity will exist to expand the mandate of the conservation management entity to encompass sustainability initiatives such as Smart Growth, community gardens, and eco-architecture and technology in building and landscaping.

Table 2. A comparison of BC's current management and funding model with a regional model developed from data analysis.

| **Current Model: Privatization, User Pay, Third Party Funding and Volunteers** | **Regional Conservation Management and Funding Model** |
|---|---|
| Conservation activities are often disaggregated or "siloed". | Conservation activities are fully integrated. |
| Conservation management is mostly reactive. | Conservation management is mostly planned. |
| Recreation and access is prioritized over conservation. | Recreation and conservation management are considered together |
| Protected areas as not valued as assets for their conservation values | Protected areas are defended and capitalized on as conservation assets. |
| Conservation management's true value and costs are not recognized. | Conservation management's true value and costs are asserted. |
| The role of protected areas to create and nurture a land ethic is ignored. | The role of protected areas to create and nurture a land ethic is emphasized. |
| Some direct revenue from protected areas is not retained (e.g. ski hill revenue) yet more revenue is sought through user fees. | All protected area revenues are retained within the region. |
| Indirect funds from users who are profiting from protected areas (i.e. tourism businesses, developers) are neither recognized nor accessed. | Mechanisms are developed which access a portion of private sector profits from protected areas. |
| Public participation in decision-making is undervalued and underutilized. | A variety of tools are used to educate and empower the public. |
| The number of knowledgeable staff available to address conservation management is minimized. | Knowledgeable staff are available to effectively address all aspects of conservation management. |
| Privatizes some of the benefits of conservation but allows the public to shoulder the costs | Benefits and costs are linked together. |
| Donors and volunteers are discouraged through privatization. | Many avenues are provided for charitable donations and a system is in place to support volunteers. |
| Competition dysfunctions are created among agencies and organizations forced to seek third party funding. | Agencies and organizations are integrated and do not compete for funding. |
| User fees fail to free up funding from general appropriations. | Conservation and recreation do not compete for funding. |
| User fees return less than anticipated revenues. | A broad portfolio of revenue generation mechanisms reduces reliance on any one mechanism. |
| User fees contribute to public mistrust and anger, which further exacerbates funding problems. | Each revenue generation mechanism is explored using market research and implemented with strategic planning. |

| | |
|---|---|
| User fees deny equal access to conservation values (e.g. among social classes) | Revenue generation mechanisms are only considered if they adhere to a set of sustainability principles. |

## Positive Steps

This thesis has demonstrated that models which rely on privatization, user pay and volunteers do not effectively serve conservation management. This is beginning to be addressed as a result of successful initiatives involving a wide range of organizations engaged in exploring, developing and implementing complementary approaches to conservation management and funding of protected areas, particularly in coastal BC.

The Pacific Estuary Conservation Program (PECP) is a partnership including CWS, DFO, MOE, HCTF, DUC, NCC, TNT and TLC. Pooled funds, expertise and staff resources have been used to secure and manage coastal estuaries, including those in MABR, since 1987.

The Vancouver Island Wetlands Management Program was initiated in 1989. It is a conservation partnership which operates within BC's Region 1, and includes MOE, CWS, DUC, TNT and HCTF. The VIWMP was instrumental in the establishment of the PQWMA, and in the purchase of Block 602 along the Englishman River, now managed by the RDN as Englishman River Regional Park. The latter involved more than 20 partners including *all levels of government, land trusts, stewardship groups, corporations and foundations.* Over its last reporting period, the VIWMP spent $25 per ha for management and restoration activities on 9000 ha of conservation lands (T. Clermont, personal communication, November 20, 2005). By comparison, James, Green & Paine (1999) calculated a global mean budget for protected areas of US$8.93 per ha. In 2001, Lindberg reported the average per hectare funding for protected area conservation in developed countries to be US$20.58. CPAWS (n.d.) found Parks Canada spent $14.64/ha (in Canadian dollars) for national parks, while BC spent $2.63/ha. With some revenue generation, Dave Smith (personal communication, October 26, 2005) has $2/ha to spend on regional National Wildlife Areas; nationally the estimate is a mere $0.15/ha. (Due to the variety of ways costs per hectare can be calculated, comparisons must be viewed with some caution.).

The BC Conservation Lands Forum (BCCLF, 2004) is a group of top level decision-makers from DUC, TNT, Nature Conservancy of Canada (NCC), TLC, Pacific Salmon Foundation, Environment Canada, MOE, Ministry of Agriculture and Lands (Crown Lands), HCTF, and the Union of BC Municipalities, who are collectively

working towards conservation goals with an $8 million BC Trust for Public Lands matched 3:1 by non-provincial government partners over a 5 year period. The overarching goal of the BCCLF is to create a provincial umbrella organization that improves coordination of private and public sector efforts to secure and manage lands for biodiversity conservation, building on and strategically aligning with existing successful regional conservation partnerships such as the PECP and local governments and stewardship groups sub-regionally.

A Land Management Committee is responsible for prioritizing properties for management attention, developing land management standards, coordinating land management activities, and identifying and implementing solutions to address ongoing funding needs – i.e. potential economic opportunities consistent with management plan objectives and use of revenue from leased and licensed conservation lands. The Conservation Planning Tools Committee is developing a provincial biodiversity strategy to provide scientific information to identify priority areas for biodiversity conservation and to use when resource trade-offs are considered. An Innovative Policy Committee will recommend legal, regulatory and policy reform to governments to improve incentives and streamline processes for conservation land securement and management, and investigate solutions such as biodiversity credits. The mission of the Stewardship, Education and Outreach Committee is to identify gaps in existing outreach tools and voluntary private land and watershed stewardship efforts, to find ways to instill a broad conservation ethic, and to support the development of new mechanisms to help private landowners manage conservation values. Adaptive management (i.e. monitoring and evaluation) is incorporated into all forum and committee activities, and a formal framework for efficient exchange of data is included.

The PECP, VIWMP and BCCLF are synergistic coalitions which the Regional Conservation Management and Funding Model could readily build upon.

Landscape management is already underway with initiatives such as the Englishman River Watershed Recovery Plan. Participants stated that MOE has defined broad management areas under a new area-based planning strategy, based on watershed, jurisdictional and tenure boundaries.

In 2005, the Minister of Environment announced $12.2M in infrastructure spending towards the maintenance backlog. A conservation corps was funded by the Province and administered through the BC Conservation Foundation to help with inventories and invasive species. MOE participants described a new and evolving Biodiversity Ranking Tool to rank conservation project proposals for funding, considering risks associated with development and other pressures, biodiversity values and other criteria.

The Mount Arrowsmith Biosphere Reserve designation, while currently absent in the minds of most residents, is a major opportunity and a responsibility, i.e. UNESCO requires a biosphere reserve to adhere to a set of criteria within a statutory framework (UNESCO, n.d.). The valuable role of the Clayoquot Biosphere Trust in supporting protected area management in the adjacent reserve are testimony to what such a designation can do for conservation.

The path ahead involves building on existing work in the area and drawing on the many successful integrated conservation management entities to be emulated and tailored to MABR. The Grand River Conservation Authority and Niagara Escarpment Commission are extraordinary examples to learn from (GRCA, 2005; Niagara Escarpment Foundation, 2004; Ontario's Niagara Escarpment, 2005). Gwaii Hanaas National Park Reserve is an excellent example of co-management with First Nations (Hamashige, 2005). The "seamless network of parks" is a pilot project in the southeastern U.S. worthy of further examination (U.S. National Park Service, 2005).

Moreover, revenue generation mechanisms can be used to develop and help fund the model. For example, a *Payment for Watershed Services* can take advantage of a local sense of urgency to provide security for drinking water and fisheries, at the same time promoting integrated resource management at a regional scale. *Conservation Banking* could mobilize the private sector to help create a functional protected area system under a regional conservation plan.

## Next Steps

Article 8 of the Convention on Biological Diversity (CBD), to which Canada is a signatory, requires that protected areas be planned and managed as a system (CBD, 2004; IUCN, 2000). VIWMP partners should pilot a regional project to collectively manage a network of protected areas for conservation and recreation, which includes local governments, First Nations, TLC, DFO, Pacific Salmon Foundation and perhaps Mount Arrowsmith Biosphere Foundation. Alternatively the project could build upon the PECP partnership, or a combination of the two. Although the BCCLF was consistent with the principles and model, it was not chosen as the vehicle for the pilot for several reasons. The BC Trust for Public Lands is only a five year funding commitment. Acquisitions are a primary focus, too little funding is available for management, some committees are not yet underway, and the biodiversity strategy or planning tool may take several years to develop.

The new partnership should clearly define a management unit, taking into account ecological and jurisdictional boundaries.

Cooperative, equitable working and funding protocols must be fully described in Terms of Reference. Perhaps the greatest limiting factor to the integrative functioning of existing coalitions is competition. They are assemblies of positions, each representative beholden to their organizations. Without integration, including a central no-strings-attached kitty and a funding formula, partners will continue to vie for pet projects and staff time and withhold critical information. The CBT resolved the problem of competition in the following way:

> If you sit as a board member from the District of Tofino, you do not come to the board and represent Tofino to the biosphere reserve; you represent the biosphere reserve to the District of Tofino. The issue is not how much you can get for your individual community in the process. It would become a dysfunctional organization because everyone fights for their particular interest groups. So we ….manage that very carefully (S. Boychuk, personal communication, May 17,2005).

Other aspects of integration must be defined to allow for advantages of scale, management of regional threats and protection of sensitive individual elements. Participants on the BCCLF and others recommended management standards to be able to

manage all regional parks or all WMAs the same way. However, each protected area, regardless of designation, is unique with different management and funding needs.

The integrated partnership and its Management Coordinator should then assemble a multi-disciplinary team of professionals to conduct management planning and activities.

A preliminary landscape management plan should be developed at this stage. Due to implications of the ENR land grant, conservation on private lands is necessary to maintain or restore natural values in parks and conservation areas. A strategy must be formulated to ensure external threats are no longer viewed with helplessness. Part of the strategy must include ways to develop a regional conservation or land ethic that will establish a constituency that calls for and supports policies, plans and programs to protect, and where needed, restore and maintain the landscape and ecosystem features and functions that contribute to the overall well-being of current and future residents of the MABR.

Inventories are a necessary early step. Without them, we risk significantly depleting natural assets without even realizing it. Limited data have shown that the eastern portion of MABR is a biodiversity rarity and richness hotspot underrepresented in the provincial protected area system (Scudder, 2003). BC Parks staff have not documented species at risk and other “fine filter” elements and even general inventories are lacking in regional parks and most private conservation lands.

Monitoring and research projects are other essential planning elements, to allow managers to make defensible statements on the condition of protected areas, to clearly distinguish one threat from another, and to demonstrate need and motivate investments.

As inventories, monitoring and research become available, they should be used to refine management plans, define limits of acceptable change, guide enforcement activities, and formulate educational strategies.

A system to consistently fund, guide or otherwise support the work of stewardship groups and volunteers should be created as soon as possible. Other avenues for public participation should be created, perhaps through public liaisons.

The professional team should begin to develop a defensible financial assessment of the value of the region's protected areas and the services they provide, which can be used to further inform and justify management decisions.

## Conclusion

Picture a landscape where protected areas are completely unnecessary, because people live in harmony with the environment and ecological integrity is always considered first and foremost. Wildlife move through backyards with ease and there is no need for enforcement of setbacks because people are fully aware that development beside a stream is a lousy idea. Now face the other end of the spectrum, where protected areas are reservoirs of ecological integrity in a sea of modified landscapes. They are isolated remnants vital to the future of humankind but external threats lie along their entire perimeter and a growing population demands evermore. Collapsing fisheries, boil water advisories, evidence of climate change, and rapidly diminishing green space due to rampant development are real threats to our heritage today. We are at a juncture, where a paradigm shift is necessary to avoid the latter scenario and move closer to the former. New institutions developed from an integration of the old, one well-defined functional management area; new goals that emphasize ecological integrity, processes where leaders and professionals walk the land together with the public, revenue generation initiatives that help build a sustainable economy and inspire a conservation ethic, and political will – these are leverage points for a paradigm shift.

**References**

Alexander, P. (2004). Treasurer's report. *Landmark, Fall,* p. 3-4.

Arches National Park. (n.d.). Home page. Retrieved November 1, 2005, from http://www.us-parks.com/arches/index.html

Bagnoli, P. & Rastogi, T. (2003, September). *Distributive issues relating to parks: Overview of issues and selected case studies,* Vth World Parks Congress: Sustainable Finance Stream, Durban, South Africa.

Bari, J. (2002). *Literature review on market-based instruments*. New South Wales Department of Land & Water Conservation, Economic & Social Policy Branch.

Barisoff, B. (2004, April 23). Minister of Water, Land and Air Protection. *North Shore Outlook* [letter to the editor]. Retrieved November 2, 2004, from http://www.gov.bc.ca

Barisoff, B. (2004, April 30). Minister of Water, Land and Air Protection. *Penticton Herald* [letter to the editor]. Retrieved November 2, 2004, from http://www.gov.bc.ca

Barlee, G. & Riccius, E. (2005). *Parking meters in parks a fiasco*. Western Canada Wilderness Committee & Canadian Parks and Wilderness Society. Retrieved May 11, 2005, from http://media.wildernesscommittee.org/print.php?id=1332

Barton, R. (2000). The implications of sponsorship for state park management. *The George Wright Forum,* 17(3), 40-47.

Batra, G.S. & Kaur, N. (1996). New vistas in reducing the conflicts between tourism and the environment: an environmental audit approach. *Managerial Auditing Journal, 11* (4), 3-10.

Birch, I. (2004). *Final report on parks' recreation services risk assessment*. Internal Audit & Advisory Services. Received from G. Barlee, WCWC.

Birdlife International. (1997). *Economies, employment and conservation in Europe*. Cuff, J. & Rayment, M. (Eds.).

Boyd, D.R. (2003). *Unnatural law: Rethinking Canadian environmental law and policy.* Vancouver, British Columbia: UBC Press.

Briassoulis, H. (1999). Impact of tourism on biodiversity. *European Nature, 3,* p.16.

British Columbia Conservation Land Forum [BCCLF]. (2004). Memorandum of understanding.

British Columbia Institute of Technology [BCIT]. (2004). *Managing for ecological integrity in B.C.'s parks and protected areas*. PRKS 3410 course manual.

British Columbia Legislative Assembly, Select Standing Committee on Finance and Government Services.(2005). Report on the 2006 budget consultation process. First report, first session, 38th Parliament, November. Retrieved November 17, 2005, from http://www.leg.bc.ca/cmt/38thparl/session-1/fgs/reports/Rpt-FIN-37-5-FirstReport-05Nov15.pdf

British Columbia Ministry of Environment [MOE]. (2005). *Beverage container stewardship program regulation annual report by the Director, 2004-2005 reporting period.* Retrieved November 2, 2005, from http://wlapwww.gov.bc.ca/epd/epdpa/ips/bev/reports/bev2004_05.html

British Columbia Ministry of Environment and Parks. (1988). *Rathtrevor Beach Provincial Park master plan.*

British Columbia Ministry of Environment, Lands and Parks [MELP]. (1999). *BC Parks impact assessment process,* part 1: policy. Retrieved October 10, 2005, from http://wlapwww.gov.bc.ca/bcparks/conserve/impact/ia_proc/policyf.pdf

British Columbia Ministry of Finance. (2005). *Second quarterly report on the economy, fiscal situation, and outlook.* Retrieved November 5, 2005, from http://www.fin.gov.bc.ca/qrt-rpt/qr04/Q2_04.pdf

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (1992). *Macmillan Provincial Park master plan*. Retrieved October 6, 2005, from http://wlapwww.gov.bc.ca/bcparks/planning/mgmtplns/macmillan/macmillan.pdf

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2001). *Economic benefits of British Columbia's provincial parks*, MWLAP and PricewaterhouseCoopers.

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2002). *Status and trends of protected areas.* Environmental trends in British Columbia. Retrieved October 9, 2005, from http://wlapwww.gov.bc.ca/soerpt/1protectedareas/percentglance.html

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2003, November 18). *Parks to be world-class resort destination, create jobs.* News release (2003WLAP0077-001021). Retrieved November 11, 2005, from http://www2.news.gov.bc.ca/nrm_news_releases/2003WLAP0077-001021.htm

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2004, August 9). *Macmillan Park safety improvement project.* Fact sheet. Retrieved October 7, 2005, from http://www.gov.bc.ca/bcgov/content/docs/@2Jp6f_0YQtuW/factsheet_macmilla_park_aug9_04.pdf

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2004, September 25). $7 million to protect and restore B.C.'s rivers. News release (2004WLAP0049-000758).

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2005a). *2001-2004 Day use attendance (parties) at provincial parks collecting day use parking fees*. Freedom of information request WLP05.016 from G. Barlee, Western Canada Wilderness Committee.

British Columbia Ministry of Water, Land and Air Protection [MWLAP]. (2005b). *Summary of data – public compliance from parking meters May 2001-October 2004*. Freedom of information WLP05.016 provided to G. Barlee, Western Canada Wilderness Committee

British Columbia [BC] Parks. (n.d.). Welcome to BC Parks. Retrieved August 29, 2005, from http://wlapwww.gov.bc.ca/bcparks/

British Columbia Wildlife Federation [BCWF]. (2005). *BCWF brief towards a game species management trust fund, submitted to Minister of Water, Land and Air Protection.* Retrieved July 29, 2005, from http://www.bcwf.bc.ca/s=177/bcw1102547280790

Brown, C. (2001). *Visitor fee use in protected areas: Synthesis of the North American, Costa Rican and Belizean experience.* The Nature Conservancy Ecotourism Program technical report series number 2.

Burgess, T.E. (2002). Environmental cuts – what we're losing. For the HELP MELP Campaign, editorial in B.C. Politics.ca. Retrieved January 16, 2005, from http://www.bcpolitics.ca/left_environmentalcuts.htm

Butler, R. (1980). The concept of a tourist area cycle of evolution: implications for management of resources. *Canadian Geographer*, *24*(1): 5-12.

Canadian Biosphere Reserves Association [CBRA]. (2005). *Business proposal 2005-2008.*

Canadian Parks and Wilderness Society [CPAWS]. (2002a). *CPAWS response to the Recreation Stewardship Panel's draft recommendations – October 15, 2002.* CPAWS – BC Chapter. Retrieved September 14, 2005, from http://www.cpawsbc.org/parkwatch/parks_at_risk.php

Canadian Parks and Wilderness Society [CPAWS]. (2002b). *Summary report: Province-wide public response to the draft recommendations of the Recreation Stewardship Panel*. Retrieved September 14, 2005, from http://www.cpawsbc.org/parkwatch/parks_at_risk.php

Canadian Parks and Wilderness Society [CPAWS]. (n.d.). Advertisement. Retrieved October 9, 2005, from http://www.cpawsbc.org/pdfs/CPAWS_coffeeV21.pdf

Caskey, M. & Henigman, M. (2002). Audit of selected polygons of the sensitive ecosystems inventory of East Vancouver Island and Gulf Islands, 1999-2001: Summary Report1, Ministry of Water, Land and Air Protection. Retrieved December 19, 2005, from http://wlapwww.gov.bc.ca/vir/pa/sei_short.pdf

City of Parksville. (2005). Community profile. Retrieved October, 2005, from http://www.city.parksville.bc.ca/cms.asp?wpID=9

Cline, E.A. (2002). *The impact of an urban stormwater constructed wetland on residential property values: A case study of the Tollgate wetland*. Master's thesis, Michigan State University. Retrieved September 15, 2005, from http://www.msu.edu/~clineeri/thesis.htm

Commission for Environmental Cooperation. (1999). *The development of sustainable tourism in natural areas in North America: Background, issues and opportunities*. Discussion paper prepared for a dialogue on sustainable tourism in natural areas in North America, May 27-28, 1999, Playa del Carmen, Mexico.

Connor, N. & Gilligan, B. (2003). *Socio-economic benefits of protected areas: Concepts and assessment techniques as applied in New South Wales, Australia*. Vth World Park Congress: Sustainable Finance Stream, Durban, South Africa.

Conservation Finance Alliance. (2002). Conservation Finance Guide, payments for watershed services, retrieved October 20, 2005, from http://guide.conservationfinance.org/chapter/index.cfm?IndexID=18

Conservation Finance Alliance. (n.d.). [Brochure]. Retrieved November 4, 2004, from http://www.conservationfinance.org/Documents

Convention on Biological Diversity [CBD]. (2004). *Parties to the Convention on Biological Diversity / Cartagena Protocol on Biosafety*. United Nations Environment Programme, Retrieved November 4, 2004, from http://www.biodiv.org/world/parties.asp

Cooper, A. (2005). *Affinity credit cards – using a credit card to help others,* CardRatings.com, February 17. Retrieved November 16, 2005, from http://www.cardratings.com/affinitycreditcards.html

Cooper, P.J. & Vargas, C.M. (2004). *Implementing sustainable development: From global policy to local action.* Lanham, Maryland: Rowman & Littlefield Publishers.

Council of Tourism Associations of British Columbia [COTA]. (2002). *Submission on the Recreation Stewardship Panel draft recommendations: A new management and funding model for fish, wildlife and park recreation.*

Council of Tourism Associations of British Columbia [COTA]. (2005). *Land and resources.* Retrieved July 28, 2005, from http://www.cotabc.com/policy/land_and_resources.aspx

Dane, C. (2005, September 23). Parks parcel tax starts in 2006**.** *The News,* p. A23.

Deardon, P. & Dempsey, J. (2004). Protected areas in Canada: decade of change, *The Canadian Geographer,48,* 225-239.

Denisoff, C. (2005, April 25). Guest editorial: "What do the environmentalists know that the wetland experts do not?" *The Katoomba Group's Ecosystem Marketplace*. Retrieved July 8, 2005, from http://ecosystemmarketplace.net

DiSilvestro, R. (1998). Giving wildlife a much-needed helping hand, *National Wildlife, 36* (1), 16-17.

Dobson, S., ed. (2003). *Policy directions for coastal tourism*. Proceedings from the workshop December 4-7, 2002, Centre for Coastal Studies, Simon Fraser University. Retrieved November 11, 2005, from http://www.sfu.ca/coastalstudies/linking/pdf/Tourism.pdf

Doppelt, B. (2003). *Leading change toward sustainability, A change-management guide for business, government and civil society.* Sheffield, U.K.: Greenleaf Publishing.

Ducks Unlimited. (n.d.). *2003 annual report*. Retrieved November 16, 2005, from http://www.ducks.org/about/2003AnnualReport/AnnualReport--Main.pdf

Ducks Unlimited Oceanside. (2005, April 29). Ducks Unlimited wow guests at fundraising. *The Star*, B17

Eagles, P.F. (2003). *International trends in park tourism: A macro view of park tourism finance.* World Parks Congress, Durban, South Africa.

Earthwatch Institute. (2005). *Voices of Earthwatch, 2004 annual report.* Retrieved October 27, 2005, from http://www.earthwatch.org/aboutew/AnnualReport04.pdf

Ecotax. (n.d.). *Environmental tax rates in Poland*. Retrieved November 2, 2005, from http://www.eco-tax.info/5EUecotax/Polandecotaxrates.htm

Ecotrust Canada. (n.d.). *Vancouver Island EcoForestry Group*. Retrieved October 29, 2005, from http://www.ecotrustcan.org/vieg.shtml

Ellison, K. & Hawn, A. (2005). Liquid assets, case study. *Conservation in Practice, 6* (2), 20-27.

Environment Canada. (2000). *The importance of nature to Canadians: The economic significance of nature-related activities.* Retrieved October 26, 2005, from http://www.ec.gc.ca/nature/TofC.htm

Ethos Environmental. (1988). *Tourism and protected area management in British Columbia, A background report prepared for BC's Parks Legacy Panel.* Retrieved September 10, 2005, from http://www.wilderness-tourism.bc.ca/docs/Parks_Legacy.pdf

European Organization for Packaging and the Environment [Europen]. 2000. *Economic instruments in packaging and packaging waste policy.* Retrieved November 2, 2005, from http://www.europen.be/issues/Economic_Instruments.pdf

Fawcett, I. (2005). Participation and volunteering: it's people who make the difference. *Landmark, Summer*, 3-4.

Fleischer, D. (2005, July 12). Wetland mitigation banking: Environmentalists express concerns. *The Katoomba Group's Ecosystem Marketplace*. Retrieved July 8, 2005, from http://ecosystemmarketplace.net/pages/article.opinion.php?component_id=3700&component_version_id=5252&language_id=12

Forest Practices Board [FPB]. (2004). *Integrating non-timber forest products into forest planning and practices in British Columbia* (special report FPB/SR/19).

Fox, J. & Nino-murcia. (2005). Status of species conservation banking in the United States, *Conservation Biology 19*, 996-1007.

Fraser, R. (2002). *Mount Arrowsmith Biosphere Reserve: A cooperation plan.* For the Mount Arrowsmith Biosphere Foundation.

Gibbard, K. (2005). TLC: The next generation. *Landmark, Summer*, p. 14.

Global Reporting Initiative [GRI]. (2002). *Tour operators' sector supplement for use with the GRI 2002 sustainability reporting guidelines, pilot version 1.0*. Retrieved October 31, 2005, from http://www.globalreporting.org/guidelines/sectors/tourop.asp

Grand River Conservation Authority. (2005). Home page. Retrieved November 8, 2005, from http://www.grandriver.ca/index.cfm

Grewell, J. B. (2004). *Recreation fees – four philosophical questions* (PERC policy series issue PS-31). Retrieved September 11, 2005, from http://www.perc.org/pdf/ps31.pdf.

Groves, C.R., Jensen, D.B., Valutis, L.L., Redford, K.H., Shaffer, M.L., Scott, J.M., Baumgartner, J.V., Higgins, J.V., Beck, M.W. & Anderson, M.G. (2002). *Bioscience, 52*, 499-512.

Haida Gwaii/Queen Charlotte Islands Heritage Tourism Strategy Working Group. (2003). *Haida Gwaii Queen Charlotte Islands heritage tourism strategy*.

Habitat Conservation Trust Fund [HCTF]. (2005). Home page. Retrieved October 24, 2005, from http://www.hctf.ca/

Hamashige, H. (2005, June 27). Surprise finds top list of best national parks. *National Geographic News.* Retrieved September 16, 2005, from http://news.nationalgeographic.com/news/2005/06/0627_050627_bestparks.html

Hardin, G. (1968). The Tragedy of the Commons. *Science, 162,* 1243-1248. Retrieved December 19, 2005, from http://www.islandone.org/LEOBiblio/SPBI1HC.HTM

Harnik, P. (2003). *The excellent city park system: What makes it great and how to get there.* The Trust for Public Land.

Higgins, A. (2005, October 13). Sending kids back to nature: Away from TV, playing outdoors. *Washington Post.* Retrieved October 26, 2005, from http://www.washingtonpost.com

Hine, S.E. (2005, September 13). City of Parksville public notice. *The News*, B16.

Inform. (2005). *Germany, garbage, and the green dot: Challenging the throwaway society*. Retrieved November 2, 2005, from http://www.informinc.org/xsum_greendot.php

Insurance Corporation of British Columbia [ICBC]. (2004). *Autoplan insurance*. Retrieved November 2, 2005, from http://www.icbc.com/insurance/insura_getsta_howbuy_plates.html

The International Association of Fish and Wildlife Agencies [IAFWA]. (2005). *Teaming with Wildlife, A history of the quest for wildlife diversity funding.* Retrieved October 27, 2005, from http://www.teaming.com/docs/TWW%20History.pdf

James, A.N., Green, M.J., & Paine, J.R. (1999). *A global review of protected area budgets and staff* (biodiversity series no. 10).World Conservation Monitoring Centre.

Jamieson, G. (n.d.). Mount Arrowsmith Biosphere Reserve [map].

Jenner, M. (2002a). *Wildlife viewing inventory of conservation areas on central-south Vancouver Island.* Prepared for BC Ministry of Water, Land and Air Protection.

Jenner, M. (2002b). *Vancouver Island wildlife viewing network business plan*. Prepared for BC Ministry of Water, Land and Air Protection

Jenner, M. (2005). *Realizing the economic benefits of a wildlife festival: Brant Wildlife Festival visitor research project, Overview of results 2003-2005* [Brochure]. Whitehorse, Yukon Territory: Matt Jenner Consulting Tourism and Environmental Services.

Johnson, J. (2005). *Waterton-Glacier International Peace Park: The economic implications of expanding into the Flathead Region of BC, prepared for Canadian Parks and Wilderness Society.* Yellowstone to Yukon Conservation Initiative and Wildsight. Retrieved September 16, 2005, from http://www.cpawsbc.org/pdfs/waterton_park_report.pdf

Kallis, G. & H. Coccossis. (2004). Theoretical reflections on limits, efficiency and sustainability: Implications for tourism carrying capacity. In H. Coccossis & A. Mexa (Eds.), *The challenge of tourism carrying capacity: Theory and practice*. Hants, England: Ashgate Publishing Ltd.

Kostantinos, P. (2001). A combined park management framework based on regulatory and behavioural strategies: Use of visitors' knowledge to assess effectiveness, *Environmental Management, 28* (1), 61-73.

Krieger, D.J. (2001). *Economic value of forest ecosystem services: A review*. An analysis prepared for The Wilderness Society.

Land and Water British Columbia [LWBC]. (2005). *Water Act, Section 9, "Changes In and About a Stream"*. Retrieved October 20, 2005, from http://lwbc.bc.ca/03water/licencing/section9/index.html

The Land Conservancy [TLC]. (2004). *Conservation holidays.* [Brochure]. Victoria, BC.

The Land Conservancy [TLC]. (2005a). Comings and goings around at TLC, Conservation holidays in full swing, Traditional ecological knowledge, *Landmark, Summer*, p.13.

The Land Conservancy [TLC]. (2005b). *Green Gift Catalogue*. Retrieved October, 2005, from http://www.conservancy.bc.ca/store/

The Land Conservancy [TLC]. (2005c). *Nature cruises.* Retrieved 2005, from http://www.conservancy.bc.ca/cruises/holiday_view.php?holidayid=62

The Land Conservancy [TLC]. (2005d). *Paddling for an eco-cause: Preservation of Thwaytes Landing, Indian Arm Paddle-a-Thon returning to Deep Cove for the 4th year.* Retrieved October, 2005, from http://www.conservancy.bc.ca/regioncontent.php?sectionid=39&pageid=591

The Land Conservancy [TLC]. (2005e). Volunteer opportunities at TLC, *Landmark, Summer*, p. 8.

The Land Conservancy [TLC]. (2005f). *Wildwood.* Retrieved November 15, 2005, from http://www.conservancy.bc.ca/regioncontent.php?RequiredTitles=Property&Required=sectionid&sectionid=27&Submit=view

Lawson, M. & Watson Young, R. (1913). *A history and geography of British Columbia.* Toronto: The Educational Book Co., Ltd. Map reproduced by vihistory.ca,

Malaspina University College and University of Victoria. Retrieved October 18, 2005, from http://www.vihistory.ca

Leclerc, E. (1996). *Generating income in your backyard: A worthy approach to financing biodiversity.* Investing in Biodiversity, Buenos Aires, Argentina, November 1-3.

Leopold. A. (1949). The land ethic in *A Sand County almanac*. Retrieved December 1, 2005, from http://www.luminary.us/leopold/land_ethic.html

Lindberg, K. (2001). *Protected area visitor fees, overview.* Conservation finance guide, tourism-based user fees, resources. Retrieved September 15, 2005, from http://guide.conservationfinance.org

McLintock, B. (2005, February 7). Private land, public good, Texas-style. *The Tyee.* Retrieved February 15, 2005, from http://thetyee.ca

McNeely, J.A. & Weatherly, W.P. (1996). Innovative funding to support biodiversity conservation, *International Journal of Social Economics, 23,* 98-124.

Macpherson, A. (2001). *Sustainable tourism workshop*. Leading Edge conference 2001: Focus on the biosphere reserve, October 17-19, 2001, Niagara Escarpment Commission.

McVetty, D. & Deakin, M. (1999). *Optimising the outcomes of tourism in co-managed protected heritage areas: The cases of Aulavik National Park and Gwaii Hanaas National Park Reserve/Haida Heritage Site.* Retrieved September 27, 2005, from http://nsgl.uri.edu/washu/washuw99003/18-McVetty_and_Deakin.pdf

Martin, C. (2004). It pays to invest in the environment. UN Convention on Biodiversity, for *The Straits Times*, February 16, retrieved September 19, 2005, from http://www.buzztracker.org/2004/02/18/cache/72172.html

Meadows, D. (n.d.). *Nature is more than a commodity.* The Donella Meadows Archive, Sustainability Institute. Retrieved September 7, 2005, from http://www.sustainer.org/dhm_archive

Mid Island Wildlife Watch Society [MIWWS]. (2004, September). Newsletter.

More, T.A. (2005). From public to private: Five concepts of park management and their consequences. *The George Wright Forum, 22* (2),12-20, retrieved September 30, 2005, from http://www.georgewright.org

Mount Arrowsmith Biosphere Foundation [MABF]. (1988). *Biosphere reserve nomination form.*

Mount Arrowsmith Biosphere Reserve [MABR]. (2001a). *Mount Arrowsmith Biosphere Reserve Foundation operating framework.* Appendix B: The Seville strategy for biosphere reserves. Retrieved August 7, 2004, from http://www.mountarrowsmithbiosphere.ca/framework%20index.htm

Mount Arrowsmith Biosphere Reserve [MABR]. (2001b). *Structure of the Mount Arrowsmith Biosphere Reserve.* How are biosphere reserves selected? Attributes of the region. Retrieved August 7, 2004, from http://www.mountarrowsmithbiosphere.ca

Mulongoy, K.J. & Chape, S. (2004*). Protected areas and biodiversity: An overview of key issues* (WCMC Biodiversity Series No. 21). United Nations Environment Programme. Retrieved January 5, 2005, from: http://www.unep-wcmc.org/index.html?http://www.unep-wcmc.org/resources/publications/UNEP_WCMC_bio_series.htm/~main

Murray, A. (2000). Presentation to The Select Standing Committee on Finance and Government Services on behalf of the HELP MELP campaign, November. Retrieved November 4, 2004, from http://www.naturalists.bc.ca/news/financemelp.htm

Muskwa- Kechika Management Area [MKMA]. (2005). *Trust fund*. Retrieved October 24, 2005, from http://www.muskwa-kechika.com/trustfund/

National Environmental Treasure [NET]. (2005, spring). The NET launches first e-auction thanks to Vancouver Island watercolourist, *NETscape, spring*. Retrieved October 28, 2005, from http://www.oursafetynet.org/documents/NET_newsletter_1.pdf

National Environmental Treasure [NET]. (2005a). Home page. Retrieved October 28, 2005, from http://www.oursafetynet.org/index.htm

National Environmental Treasure [NET]. (2005b). A tool for action. Retrieved October 28, 2005, from http://www.oursafetynet.org/eco_savers.htm

National Round Table on the Environment and the Economy. (2003). *The state of the debate on the environment and the economy: securing Canada's natural capital: a vision for nature conservation in the 21st century.* Retrieved November 1, 2004, from http://www.nrtee-trnee.ca/Publications/PDF/SOD_Nature_E.pdf

National Union of Public and General Employees. (2002). *BC's parks targeted for Liberal commercialization.* Retrieved January 15, 2005, from http://www.nupge.ca/news_2002/news_sep02/n18se02a.htm

The Nature Conservancy [TNC]. (2003). *Setting the record straight regarding the Washington Post 'Big Green' series.* Retrieved October 26, 2005, from http://nature.org/pressroom/files/tnc_response_06_11_2003.pdf

The Nature Conservancy [TNC]. (2004). *State level conservation funding mechanisms*. Retrieved October 27, 2005, from http://www.biodiversitypartners.org/policy/funding.shtml

The Nature Conservancy [TNC]. (2005). *Greater than the sum of our parts.* About us, President's message. Retrieved October 16, 2005, from http://web.nature.org/aboutus/about/art5469.html

The Nature Conservancy [TLC]. (2005, October). Test your ecosystem IQ, *Great Places, October*. Retrieved October 5, 2005, from http://nature.org/initiatives/freshwater/about/quiz.html?pollution

New Zealand Parliamentary Commissioner for the Environment. (1997). *Management of the environmental effects associated with the tourism sector*. Wellington: Parliamentary Commissioner for the Environment.

Niagara Escarpment Foundation [NEF]. (2004). *Protecting the Niagara Escarpment –The Success Story of the Niagara Escarpment Plan.* Retrieved November 9, 2005, from http://www.niagaraescarpment.com/

Oceanside Tourism Association. (2005). Rivers, trees and trails: Oceanside parks. *Vancouver Island's Oceanside region vacation planner.*

Olewiler, N. (2004). *The Value of Natural Capital in Settled Areas of Canada*. Ducks Unlimited Canada and the Nature Conservancy of Canada. Retrieved 2005, from http://www.ducks.ca/aboutduc/news/archives/pdf/ncapital.pdf

Ontario's Niagara Escarpment. (2005). Home page. Retrieved November 9, 2005, from http://www.escarpment.org/index.htm

Ottaway, D.B. & Stephens, J. (2003, May 4). Nonprofit land bank amasses billions: Charity builds assets on corporate partnerships, *Washington Post*. Retrieved January 22, 2005, from http://www.washingtonpost.com/wp-dyn/nation/specials/natureconservancy/

Pacific Forestry Centre. (2004). *Vancouver Island community benefits from fast-growing, carbon-storing plantation program.* Information forestry, Natural Resources Canada. Retrieved November 10, 2004, from http://www.pfc.cfs.nrcan.gc.ca/news/InfoForestry/Aug2004/plantation_e.html

Parks Canada. (2001). *First priority: Progress report on implementation of the recommendations of the Panel on the Ecological Integrity of Canada's National Parks.*

The Parks Company. (2003). Home page. Retrieved November 17, 2005, from http://theparksco.com/

Parpairis, A. 2004. Tourism carrying capacity assessment in islands. In H. Coccossis, H. & Mexa, A. (Eds.). *The challenge of tourism carrying capacity: Theory and practice.* Hants, England: Ashgate Publishing Ltd.

Pearce, D. (1999). Saving biodiversity with economics, *European Nature, 3*, p.8.

Pergams, O.R., Czech, B., Haney, J.C. & Nyberg, D. (2004). Linkage of conservation activity to trends in the U.S. economy, *Conservation Biology, 18*, 1617-1623.

Platts, L.E. (1998). *Enviro-capitalists.* PERC reports. Retrieved October 25, 2005, from http://www.perc.org/publications/percreports/dec1998/envirocapitalists.php

Praire Restorations (n.d.). Home page. Retrieved October 25, 2005, from http://www.prairieresto.com/index.html#Home

Productivity Commission. (2001). *Harnessing private sector conservation of biodiversity.* Commission research paper. Ausinfo, Canberra: Commonwealth of Australia.

Property and Environment Research Centre [PERC]. (1997). *Parks in transition* (Issue RS-97-1). Montana: Leal, D.R., & Lippke Fretwell, H.

Property and Environment Research Centre [PERC]. (1999). *Paying to play: the fee demonstration program* (Issue No. PS-17). Montana: Lippke Fretwell, H., Shaw. J.S., series ed.

Quintela, C.E., Thomas, L., & Robin, S. (2003, September*). Sustainable finance stream background paper, Overview and objective.* Vth IUCN World Parks Congress, Durban, South Africa. Retrieved October 28, 2005, from http://conservationfinance.org/WPC/WPC_documents/WPC-SF_Scoping_Paper_v4.pdf

Recreation Stewardship Panel. (2002). *A new management and funding model for fish, wildlife and park recreation: final report and recommendations.* Retrieved November 5, 2004, from: http://wlapwww.gov.bc.ca/esd/recpanel/finalreport.pdf

Regional District of Nanaimo [RDN]. (2004). Drinking water protection action plan. Retrieved November 17, 2005, from http://www.rdn.bc.ca/cms/wpattachments/wpID421atID717.pdf

Regional District of Nanaimo [RDN]. (2005a). Regional parks & trails plan 2005-2015. Retrieved November 17, 2005, from http://www.rdn.bc.ca/cms/wpattachments/wpID766atID822.pdf

Regional District of Nanaimo [RDN]. (2005b). Sustainability report 2003-2004.

Rees, W.E. (2000). Book review, *Ecosystem Health, 6*, p. 166.

Richardson, Lisa.(2004, September 9). Chief battle sparks park fears. *The Tyee*. Retrieved July 29, 2005, from http://www.thetyee.ca/News/2004/09/09/CheifBattleSparksFears/

Rodger, K. & Moore, S.A. (2004). Bringing science to wildlife tourism: The influence of managers' and scientists' perceptions. *Journal of Ecotourism, 3* (1), 1-19.

Sandborn, C. (1996). *Green space and growth: Conserving natural areas in B.C. communities.* A research paper prepared for Commission on Resources and Environment, Wildlife Habitat Canada, Fisheries and Oceans Canada, and Ministry of Municipal Affairs and Housing.

Saskatchewan Nature & Ecotourism Association [SNEA]. (2003, November). Newsletter. Retrieved November 3, 2005, from http://www.ecotourism.sk.ca/aboutess.htm

Scott, R. & Bhattacharyya, J. (2004). Farmers growing food and protecting natural habitat, *Landmark, Fall*, p. 11.

Scudder, G.G. (2003). *Biodiversity conservation and protected Areas in British Columbia.* University of British Columbia, Department of Zoology and Centre for Biodiversity Research. Retrieved October 31, 2005, from http://sierralegal.org/reports/Biodiversity_Report.pdf

Sian, S. (1999). *Mount Arrowsmith: Building a biosphere reserve, fostering a community.* Canadian Heritage National Parks Directorate

Sorensen, J. (2001). Post survivor syndrome. Global compass. *Coast, 6*, p. 56.

Species at Risk Act Public Registry. (2005). Guide to the Species at Risk Act. Retrieved March 16, 2005, from http:///www.spruceroots.org/Speakers%20Series/MR/QA.html

The Star. (2004, September 1). Thrifty Foods advertisement.

State Environmental Resource Centre [SERC]. (2004). Issue: conservation funding. Innovative state legislation. Retrieved October 27, 2005, from http://www.serconline.org/conservationfunding/stateactivity.html

Stephens, J. (2003, June 14). Conservancy abandons disputed practices. *Washington Post.* Retrieved October 26, 2005, from http://www.washingtonpost.com/wp-dyn/nation/specials/natureconservancy/

Stephens, J. (2004, March 4). Nature Conservancy retools board to 'tighten' oversight. *Washington Post.* Retrieved October 26, 2005, from http://www.washingtonpost.com/wp-dyn/nation/specials/natureconservancy/

Stone, M. & Wall, G. (2003). Ecotourism and community development: Case studies from Hainan, China, *Environmental Management, 33* (1), 12-24.

Stratton, K. (2005). Wildlife & environmental license plates, collection of Ken Stratton. Retrieved October 27, 2005, from http://www.geocities.com/MotorCity/Downs/3642/

Strock, J.M. & Wheeler, D.P. (1995). *Official policy on conservation banks*. California Environmental Protection Agency. Retrieved October 3, 2005, from http://ceres.ca.gov/wetlands/policies/mitbank.html

Tigh-Na-Mara Resort.(2005). *Amenities.* Retrieved July 26, 2005, from http://tigh-na-mara.com/resort_amenities.htm

Townsend, C. (2003). Marine tourism through education: A case study of divers in the British Virgin Islands. In Garrod, B. & Wilson, J.C., (Eds.). *Marine ecotourism: Issues and experiences* (Aspects of tourism 7). Channel View Publications.

Tourism BC. (2005a). *Building tourism with insight: regional profile, Vancouver Island, Victoria and the Gulf Islands.* Retrieved November 11, 2005, from http://www.tourismbc.com/PDF/RegionalProfile_TAVI_FINAL.pdf

Tourism BC. (2005b). *Characteristics of the commercial nature-based tourism industry in British Columbia.* Research services, in co-operation with The Wilderness Society. Retrieved November 3, 2005, from http://www.tourismbc.com/PDF/Characteristics%20of%20Commercial%20Nature-Based%20Tourism.pdf

The Tourism Company. (2004). *Vancouver Island biosphere centre phase II planning study: final report.* Prepared for Interpretive Centre Industrial Adjustment Service Committee, with Carl Bray & Associates, Lee and Associates Consulting Ltd.

Trust for Public Land. (1999). *Economic benefits of parks and open space.* Chapter 4: Boosting tourism. Retrieved October 31, 2005, from http://www.tpl.org

Turner, B. (2005). TLC and community building. *The Landmark, Summer*, p. 2.

Turner, R.W. (2002, fall). Market failures and the rationale for national parks. *Journal of Economic Education, Fall*

United Nations Educational, Scientific, and Cultural Organization [UNESCO]. (n.d.). The statutory framework of the world network of biosphere reserves. Retrieved December 10, 2005, from http://www.unesco.org/mab/docs/statframe.htm

U.S. Environmental Protection Agency. (2004). About community based environmental protection. National Center for Environmental Innovation. Retrieved March 21, 2005, from http://www.epa.gov/ecocommunity/about.htm

U.S. National Park Service. (2005). *Seamless network of parks for the southeastern US.* With NatureServe. Retrieved September 30, 2005, from http://www.nature.nps.gov/Biology/seamlessnetworks/Four_page_Seamless_brochure.pdf

Vail, A. (2005, September 30). Oceanside tourist revenue up. *The News*, A13.

Van Drimmelen, B. & Nelson, N. (2004). Report on funding research. *The Kingfisher, 8*, 17-20. (*The Kingfisher* is a newsletter produced by the Land Trust Alliance of B.C.)

Wade, B. (2005). A new tragedy for the commons: The threat of privatization to national parks (and other public lands). *The George Wright Forum, 22* (2), 61-67. Retrieved September 30, 2005, from http://www.georgewright.org

Wall, G. (1997). Is ecotourism sustainable? *Environmental Management 21*, 483-491.

Washington State Department of Ecology. (2005). *The Waste Reduction, Recycling, and Model Litter Control Act.* Litter laws & litter tax. Retrieved November 2, 2005, from http://www.ecy.wa.gov/programs/swfa/litter/laws.html

Weaver, D. (2001). *Ecotourism*. Milton: John Wiley & Sons Australia.

West Coast Environmental Law [WCEL]. (2003). *Deregulation backgrounder: Bill 84 weakens Park Act.* Retrieved January 21, 2005, from http://www.wcel.org/deregulation/bill_84.pdf

West Coast Environmental Law [WCEL]. (2005). *Riparian Areas Regulation, deregulation backgrounder.* Retrieved October 20, 2005, from http://www.wcel.org/deregulation/RAR.pdf

Wilderness Tourism Association [WTA]. (2002). *Response to the Recreation Stewardship Panel's report: A new management and funding model for fish, wildlife and park recreation*. Retrieved July 2005, from http://www.wilderness-tourism.bc.ca/docs/WTA_Rec-Steward_Responses.pdf

World Conservation Union. (2000). *Financing protected areas: guidelines for protected area managers* (Best Practice Protected Area Guidelines Series No. 5). Financing Protected Areas Task Force of the World Commission on Protected Areas (WCPA) of IUCN, in collaboration with the Economics Unit of IUCN, Phillips, A., Series Ed. Retrieved November 1, 2004, from: http://biodiversityeconomics.org/pdf/topics-38-01.pdf

World Conservation Union [IUCN]. (2004). *Playing the Mediterranean protected area game.* News, August 31. Retrieved November 17, 2005, from http://www.iucn.org/en/news/archive/2004/newaugust04.htm

World Conservation Union [IUCN]. (2005). *Sustainable financing of protected areas: A global review of challenges and options.* Draft. Retrieved October 20, 2005, from http://conservationfinance.org/Documents/Italy_meeting/IUCN_PA_Finance_-_040805.pdf

World Wildlife Fund [WWF]. (2003). *Conservation finance e-resources: A compendium of examples for self-sustaining projects to protect wildlife and the environment*, Sherman, A., (Ed.).

World Wildlife Fund European Forest Programme. (2003). *State of Europe's forest protection.* Produced within the context of the 4th Ministerial Conference on the Protection of Forests in Europe, Vienna. Retrieved January 4, 2005, from: http://www.panda.org/downloads/forests/stateeuropeforests.pdf

**Personal Communications**

- Blaine Sepos, Executive Director, Oceanside Tourism Association
- Blair Hammond, Habitat Protection Biologist and Ecological Gifts Coordinator, Canadian Wildlife Service
- Brian Springinotic, Manager, Habitat Conservation Trust Fund
- Carol Beaupre, Administrator, Osprey Park Operations Mid-Island and North Island Ltd.
- Carolyn Dodd, President, Mid-Island Wildlife Watch Society; member of Arrowsmith Naturalists and Nanoose Naturalists
- Dave Forman, Arrowsmith Area Supervisor, Protected Areas Section Parksville, Ministry of Environment
- Dave Smith, Federal Lands Manager, Canadian Wildlife Service
- Deb Kennedy, Development and Communications, The Nature Trust of B.C.
- Gail Adrienne, Executive Director, Nanaimo Area Land Trust
- Karen Hudson, Executive Director, Salt Spring Island Conservancy
- Les Bogdan, B.C. Coastal Manager, Ducks Unlimited Canada; Chair B.C. Trust for Public Lands
- Louanne Ralston, Business/Client Services Manager, Pacific Rim National Park Reserve
- Michele Deakin, Brant Festival volunteer; member, Mid Vancouver Island Habitat Enhancement Society; Coordinator, Parksville/Qualicum Beach Seachange Marine Conservation Society
- Nichola Walkden, Assistant Executive Director, The Land Conservancy of B.C.
- Randy Longmuir, Mayor, City of Parkville
- Stan Boychuk, Executive Director Clayoquot Biosphere Trust; Co-Chair, Canadian Biosphere Reserves Association
- Teunis Westbroek, Mayor, Town of Qualicum Beach
- Tim Clermont, Conservation Land Manager, Vancouver Island Wetlands Management Program
- Trevor Wicks, Arrowsmith Watersheds Coalition Society

## Appendix A. Revenue Generation Mechanisms

The following list of revenue generation initiatives is not exhaustive nor is each mechanism fully described. It is intended to be fodder for further exploration.

### *Adventure Tourism*

Adventure tourism differs from other sectors of tourism by incorporating an element of risk and requiring higher levels of physical exertion and certain specialized skills (Weaver, 2001). Recreationists are constantly seeking new experiences. For example, *Survivor* adventure packages have been popularized which combine survival challenges and tribal councils with good food and comfortable accommodations (Sorenson, 2001). A trend towards health and fitness in tourism in combination with the largest population of the healthiest and wealthiest older people in world history bode well for the adventure tourism industry (Eagles, 2003). In 2002, there were 1400 adventure tourism operators in BC (Hagan, as cited in Dobson, 2003).

MABR has much to offer adventure tourism. A trail that runs from Cameron Lake to Mount Cokely is an historic CPR trail. People would come by train and take trips up to Mount Arrowsmith on horseback. Many people will pay to re-create an historical trek and will travel a long ways to do so. Local historical societies would likely be eager partners in establishing an historical trek. Current trail agreements with forest companies may need to be strengthened.

Top Bridge Park includes challenging mountain bike trails. And once Top Bridge (i.e. the bridge) is built, there may be an opportunity for people to hike and mountain bike from Rathtrevor Beach Provincial Park to Englishman River Falls Provincial Park. There is even potential for a sea to sub-alpine East Coast Trail. People often take float trips down the Englishman River from the falls to the estuary. There are also plans to convert the Crown land that is the Mount Arrowsmith massif into parkland to adjoin to Mount Arrowsmith Regional Park.

### *Affinity Credit Cards.*

When affinity credit cards are used to purchase a good or service, the non-profit associated with them receives a small donation from the financial lender (Cooper, 2005). In Maine, affinity cards were reported to have generated $227,300 for conservation since 1996 (The Nature Conservancy [TNC], 2004). MBNA American Bank in Delaware

contributed $40 million towards Ducks Unlimited conservation initiatives since 1986 through its affinity card program (Ducks Unlimited, n.d.). As there are so many different affinity cards available, they are best suited to organizations with dedicated memberships.

***Biosphere Reserve Passport***

To generate money for conservation management, the Clayoquot Biosphere Trust is developing a Biosphere Reserve Passport, which will involve traveling throughout the reserve to solve a series of riddle and clue challenges. For ~$100 entry fee and the correct solution(s), participants will have a chance to win a $100,000 prize (S. Boychuk, personal communication, May 17, 2005). The initiative is a fun way for people to experience and learn about the natural and cultural history of the region.

***Boundary and Property Transfer Taxes***

"Mountain Bikes: Ride through Rathtrevor Provincial Park or through Top Bridge Trails and enjoy a swim in the river before heading back." "Clam digging: Rathtrevor Beach is one of the best beaches to dig for clams. We provide the bucket, rakes and a few tasty recipes from our Executive Chef." These are advertisements on the World Wide Web for Tigh-Na-Mara Resort (2005). Other businesses ran similar marketing campaigns. OTA (2005) advertised Oceanside parks in its vacation planner. It is a product of a 2% hotel tax collected to market the area for tourism. "The hotel people in this area are collecting a tax because they feel it's important to their bottom lines to continue promoting Oceanside as a destination" (B. Sepos, July 29, 2005). Funding for protected areas is not yet seen as important to hotelier's bottom lines. Yet it is BC's SuperNatural qualities, especially as protected in parks, which are the marketing hook that allows the tourism industry to be globally competitive. And protected areas are a major reason why many British Columbians spend their vacation dollars at home (Ethos Environmental, 1988).

The notion of a hotel tax for conservation is well established. On the Caribbean islands of Turks and Caicos, a 1% hotel tax finances a protected area conservation trust fund. In Spain, hotels on the Baiaeric Islands add an Ecotax of 0.5 to 2 Euros per guest per night, depending on the class of hotel, which goes toward a Tourist Area Restoration Fund. Egypt's south Sinai hotels levy an Environmental Cost Recovery Charge that is placed into an Environmental Fund. In Delaware, 10% of the hotel tax is earmarked for a

Beach Conservation Fund. In the Florida Keys, 1% of the hotel tax is a Tourist Impact Tax. Crown Hotels in Hong Kong add a voluntary "nature conservation surcharge" of US$1-2 to each guest's bill to go towards WWF Hong Kong conservation projects (WWF, 2003).

Yet many more businesses than hotels and resorts profit from protected areas. A number of nature tour companies currently pay for use of BC parks and Crown lands. In some other areas, support is more widespread. Small communities in Montana that derive a large portion of their income from tourism are authorized to collect a sales tax of up to 3% on tourist-related goods and services to pay for parks and recreational services. Flagstaff, Arizona has a 2% "bed, board and booze" tax (BBB tax), which raised $3.3 million each year; a third of the money goes to city park improvements and an extensive urban trail system (Trust for Public Land, 1999). Johnson (2005) stated that protected areas generate amenity migrants, individuals who seek high quality lifestyles emphasizing access to outdoor opportunities and natural settings. These people were found to be disproportionately well-educated and financially established, often bringing new businesses or expanding and enhancing already established businesses.

It is well established that homes developed near protected areas are more valuable than homes further away. Cline (2002) cited enhanced values for houses located within 1500 feet of natural area parks and positive impacts of up to 20% on property values. IUCN (2000) advocated capturing some of this value in the form of a regional or boundary area property tax. The tax might be paid by the developer and realtors as well as homeowners to the management of the protected area. While BC employs a market-based property tax system where residents near protected areas *may* pay more taxes than others, it doesn't function as a boundary tax since these additional dollars do not target protected areas or conservation.

Currently, all of BC's property transfer tax, which collects 1% on the first $200,000 and 2% on the balance, is applied to the consolidated revenue fund. Most U.S. states charge a real estate transfer tax, but a portion typically goes to parks or conservation. In some states, an agricultural transfer tax of up to 5% of the purchase price is imposed when agricultural land is converted to another use. Conservation also benefits from property tax incentive penalty fees, imposed when a party withdraws early from a

term agreement to conserve farmland and forested lands (TNC, 2004). Even a small fraction of one percent of existing real estate taxes could generate large amounts of money for conservation (WWF, 2003).

Currently, protected areas derive few if any benefits from private companies for the privilege of exploiting these "attractions" for profit. It must be stressed that protected area management costs rise with each new tourism marketing campaign and housing development. Some costs are direct; for example, the public pays for RDN trail pamphlets distributed to resort patrons. But the majority of expenditures relate to increased usage from tourists and new residents. It makes sense that some of the revenue gained from protected areas be directed to maintenance of the natural resources on which their businesses ultimately depend. In areas where people have been able to capitalize on their gains from the use of the land at no cost to themselves, severe environmental problems emerged, with the community bearing the costs of rehabilitation and remediation (McPhail, as cited in Dobson, 2003).

***Strengths.***

- The levy could be allocated to a fund to be distributed by a board of local protected area managers and governments, effectively promoting integrated conservation management on a regional level.
- The mechanism internalizes externalities, i.e. costs typically borne by society are shouldered by those who benefit from the use of protected areas and who create the impacts on them through this use.
- Hoteliers would see it more equitable than a hotel tax because it includes other businesses that benefit from protected areas.
- Rather than campaigning to companies to secure project-based funds, protected area managers would have a stable, long-term source of funding.
- Companies would be able to advertise that they adhere to a "triple bottom line", by supporting protected area conservation and the social amenities that protected areas provide.
- When a protected area is considered a free resource, it is in the interest of each business to maximize its use of the resource. A tax should raise conservation

awareness and through “peer pressure” help promote recreation activities and behaviours that are compatible with conservation values.

- The Oceanside Tourism Association and Council of Tourism Associations of BC support conservation.
- The mechanism draws on the wealth of the tourism industry and developers.

***Weaknesses.***

- Resorts and other tourism businesses often see themselves as the main attraction, not fully appreciating the value of the protected area to their economic bottom line.
- Protected area degradation may seem like a far-off problem to many businesses. Often private companies do not think or plan long-term.
- Business owners believe they support most protected areas through taxation.
- Some people believe higher business taxes should support protected areas but don’t need to be earmarked for conservation.
- Businesses may require results without which the levy would be decreased or withdrawn. They are likely to demand prioritization of spending on aesthetic aspects of conservation management that deliver immediate value to their customers (e.g. interpretive materials, signage and trail maintenance), over less obvious requirements such as invasive species control, inventories and research.
- Tourism markets are subject to fluctuations.
- The levy would favour larger, well-established businesses.
- Homeowners may already pay higher taxes as a result of higher property values.

***Opportunities.***

- Companies which maintain conservation standards in their operations (e.g. by employing accredited guides) or organize volunteers to help maintain conservation values could be given tax breaks and recognition.
- At a minimum, a protected area could establish a fund which local businesses and their customers could contribute to in exchange for recognition of their support.
- The tourism sector may want more participation in decision-making, which would more effectively integrate protected areas into the matrix of the community. Governments and COTA have expressed the desire to develop partnerships for

conservation. To this end, conservation and ecological integrity would have to be explicitly prioritized to prevent commercialization within protected areas. Comprehensive management plans would be necessary for each protected area or the protected area network.

- Businesses would demand tangible results from the levy, which would encourage more precise protected area record-keeping and accountability to stakeholders. Protected area managers will then be able to illuminate management needs to government and community members.
- A positive working relationship between tourism and conservation organizations could stimulate sustainable tourism development and marketing. For example, the OTA can ensure tourism materials are consistent with sustainability messages. An integrated team might better accommodate the anticipated large demographic of retirees looking for low impact ecotourism opportunities in tandem with high quality accommodation and food services. Conservation experts can help the tourism sector utilize Global Reporting Initiative guidelines, achieve Green Globe certification or win an international environmental award. In a biosphere reserve, these things are even more meaningful.
- An integrated conservation management strategy addressing tourism and development interests could provide a forum for community concerns, such as public access to the PQWMA through tourism developments, or feelings of marginalization or displacement by tourists in parks.

***Threats.***

- Though the Baiaeric Island, Spain ecotax was strongly supported by the provincial legislature, it met with initial resistance from hotels and tourists and is or was being challenged in court.
- The tourism industry may have disproportionate influence over planning and decision-making in protected areas.

(SWOT developed with participant interviews, CFA, 2002; Wade, 2005; COTA, 2002; COTA, 2005; McVetty & Deakin, 1999; Hansen as cited in Dobson, 2003; Careless, as cited in Dobson, 2003; GRI, 2002)

***Buildings***

While some may balk at the footprint of buildings and other dwellings in parks and conservation lands, these can in some (site-specific) circumstances generate revenue while protecting conservation values. A tenant, while generating revenue for the protected area, can be an on-site warden, who is or becomes familiar enough with the property and its management to help develop appropriate signage and conduct tours. According to research participants, wildlife biologists are hoping to pay conservation crews to stay with the endangered Vancouver Island Marmots as a human presence deters their predators from approaching. An appropriately sited building and video technology could accommodate researchers, nature tourists and school groups (on site and on line) while protecting the marmots and enhancing their profile.

***Strengths.***

- Dwellings can help protect and help facilitate management of parks and conservation lands.
- They can be facilities for conservation education, including research and interpretation. Often such facilities are appropriate as rentals for meetings and classes.
- Dwellings can be used to generate revenue as long-term rentals, cottage rentals or through conservation holidays. The South Winchelsea Island cottage rented for $200-250 per night or $1000-1200 per week.
- A lodge can attract a non-camping clientele who may not typically be connected to nature or exposed to a conservation ethic.
- As demographics shift, there will be increasingly more interest in roofed accommodations.
- Buildings can be part of an overall hardening of a park frontcountry area to concentrate heavy use and protect conservation values.
- The recent introduction of yurts to some provincial parks has been relatively successful, and has fostered an in-park market for camping equipment rentals (cook stoves, lights, sleeping bags).

***Weaknesses.***

- If not built with ecological integrity in mind, buildings can create a large and ever-expanding footprint, degrade or destroy conservation values and diminish the nature experience for visitors.
- Buildings and associated infrastructure require large capital outlays, a continuous stream of resources (energy, water) and ongoing maintenance.
- Governments and NGOs may not be able to afford buildings – particularly those with high construction standards, while profits from such a venture may be too low to inspire private investment (without turning it into a high end, exclusive product).

***Opportunities.***

- *The Parks and Protected Areas Statutes Amendment Act (2003),* and the *Significant Projects Streamlining Act (2003),* i.e. Bills 84 and 75, opened the door to resort and tourism development in BC Parks.
- A proliferation of high end resort development near protected areas has left a gap between camping and luxury accommodations. Nature tourists tend to favour mid-priced accommodations in a natural setting.
- A "green" building can save costs down the road while providing a valuable attraction and demonstration of eco-architecture and landscaping.
- Portable accommodations may serve just as well, without enormous capital outlays. In Australia, park agencies rented on-site private caravans (trailers) for $30-40 per night.
- Protected area managers and environmental and tourism organizations prefer intensive recreation developments to be located outside of protected area boundaries  Recent efforts to identify the location of Crown lands in the region may result in opportunities to develop facilities on lands bordering protected areas.

***Threats.***

- Many people are vehemently against private ventures in protected areas.
- Buildings and infrastructure may attract many more people and more commercial development.

- A high end product could reinforce social divides.

(SWOT developed with research participants; WCEL, 2003; Richardson, 2004; CPAWS, 2002; WTA, 2002).

***Carbon Sequestration***

Carbon stored in protected area biomass helps to mitigate climate change (IUCN, 2005). In response to the Kyoto Protocol, the international climate change treaty, carbon emitters buy carbon credits from others who create or maintain forested carbon "sinks". This emerging carbon sequestration market has already benefited some protected area managers as governments test various options. Forest 2020 Plantation Demonstration and Assessment, a federal government pilot carbon storing project, funded industry, local governments, First Nations and other landowners to establish plantations of fast-growing trees on unforested land. The Nature Conservancy of Canada (NCC) restored its Baikie Island conservation property in the Campbell River estuary with native trees and plants as part of the pilot project. The District of Campbell River used biosolids from the waste treatment plant to fertilize a nearby hybrid poplar plantation that will eventually provide pulp fibre and revenue for the district (Pacific Forestry Centre, 2004). The Vancouver 2010 Olympic committee intends to follow Torino, Italy's lead in striving for a carbon-neutral Olympics, which may introduce further opportunities.

***Conservation Banking***

Traditionally, land developers have been required to provide park land (i.e. up to 5% of the land being subdivided), resulting in many small, isolated parks with few conservation values. Today, municipal governments may request cash compensation of the same value which they may or may not apply towards the purchase of ecologically valuable lands. If a developer damages a fish-bearing stream he may be required to pay compensation, which many scornfully refer to as "the cost of doing business". The combination of extensive private land ownership, high land prices and increasing threats to protected areas from urban development can be addressed through mitigation and conservation banks. Conservation banks can be a major funding component for the creation of a functional protected area system under a regional conservation plan (Strock & Wheeler, 1995).

Conservation bankers are managers of public protected areas, managers of conservation lands owned by NGOs or commercial companies that buy land and create or restore habitat. A conservation bank is a parcel of habitat that is protected by fee simple title or is managed in perpetuity under a conservation easement. The party that purchased the habitat or holds the easement is granted credits by a government agency, which it can use or sell within a pre-designated service area to address environmental mitigation or compensation required by law. Put another way, developers are allowed to compensate for "unavoidable losses" to habitat through authorized off-site mitigation by third parties. Because most land developers don't have expertise in habitat creation, restoration or management, many prefer to buy mitigation credits from specialist wetland and conservation bankers. When a developer buys credits, the mitigation is already approved by agencies, expediting the regulatory compliance process. Because the credits represent impacts to habitats elsewhere, banking may not result in an increase in quantity of habitat, but is designed to protect a higher quality habitat. Land managers are able to optimize protected area connectivity by concentrating parcels and easements in larger areas (Fox & Nino-murcia, 2005). They are also able to save money, taking advantage of economies of scale (WWF, 2003).

"Offset" programs have been successful in several areas of the US. They have relied on strong legislation and enforcement of mitigation requirements to protect endangered species and ensure "no net loss" to wetlands. In New South Wales, Australia, the *Native Vegetation Conservation Act 1997* enables a scheme that requires parties who clear native vegetation to offset this against improvements in native vegetation (Bari, 2002). Stronger provincial legislation to comply with the federal Species at Risk Act and wetland or native vegetation protection legislation could be used to create the regulations and policy necessary for conservation banks to exist in B.C.

***Strengths.***

- Development of wetland banking would require new and effective wetland protection legislation.
- Conservation banking can stimulate a new market in mitigation services.
- In 1997 the Sensitive Ecosystems Inventory discovered that only 7.9% of east Vancouver Island and Gulf Islands could be considered relatively unmodified. Of

some 2000 sensitive ecosystems audited from 1999-2001 as follow-up, ~11% had been disturbed. In the U.S., whereas a landowner might have filled a wetland or quietly disposed of an endangered species capable of legally limiting his economic options, the banking system allows the wetland or species to be a financial asset in the form of a credit.

- The mechanism will raise awareness around the lack of wetland and species at risk protection and of current practices of developers.

***Weaknesses.***

- Wetland functions are tied to the hydrology of an area and are thus site-specific. Off-site mitigation doesn't effectively replace the ecosystem service that was lost.
- Legislative changes are necessary to develop this mechanism.
- The development sector is likely to resist legislative changes as the mechanism will add to development costs.
- Currently most infractions of the federal *Fisheries Act* go unpunished or may require minimal compensation.
- For the most part, there are no penalties associated with destruction of endangered species or wetlands. (It is possible under existing local government land use legislation to establish conditions to fulfill a development permit requirement or to complete a project that protects or restores a wetland.)

(SWOT developed with Fleischer, n.d.; Environment Canada, 2004; Caskey & Henigman, 2002)

***Case.***

In 2003, the US Army Corps of Engineers, which has authority over the nation's wetlands, issued permits to drain and fill 8,632 ha of wetlands, requiring developers with these permits to provide roughly twice as many hectares of wetland restoration, creation or mitigation. Many developers chose to purchase credits through wetland or conservation mitigation bankers.

Mitigation bankers had a set of performance standards they were required to meet before they could sell most of their credits to needy developers. Prices of mitigation credits were highly variable, depending on land purchase and restoration costs as well as the level of demand from developers - ranging from as little as US$1,200 per hectare for

wetland credits in some areas up to US$300,000 per hectare for certain exceptional conservation banks. The number of wetland banks grew from 46 approved banks operating in 18 States in 1992/93 (one privately owned), to 219 approved banks in 40 States in 2001/02 (two-thirds were private commercial operators).

Endangered species banking is at an earlier stage of development but is also growing rapidly, with 35 approved banks operating in 5 States in 2003 (63 percent privately owned). Twenty-nine of these were in California and half were located adjacent to existing protected areas (IUCN, 2005; Denisoff, n.d.).

***Conservation Holidays***

Conservation holidays are a good example of how revenue generation can be used to accomplish management objectives and provide an opportunity for people to invest a part of themselves and gain a sense of place and stewardship. TLC's working holidays are modeled after the U.K.'s National Trust holidays; they are 3 day to week-long excursions where people pay ~$75 to $185 to work on a conservation property with a warden or volunteer leader. While the organization could probably charge much more – particularly to foreign tourists, it does not want to bar access or make the experience a privilege. Nature education is a key component; people may learn to make natural riprap with willow for stream stabilization, for example. TLC's most successful working holidays are on South Winchelsea Island in MABR, where the work is predominantly invasive species control. Last April, a member of the Songhees First Nation joined holiday participants to share traditional ecological knowledge about indigenous land management techniques. Because there is an on-site dwelling, it is also used for other revenue generation initiatives such as leadership training courses and cottage rentals (N. Walkden, personal communication, 2005; TLC, 2004; TLC, 2005a).

Earthwatch Institute, an international non-profit, supports peer-reviewed scientific field research around the world through public participation. In 2004, it sponsored more than 130 projects in 44 countries, distributing $3.8 million in field grants to support more than 280 scientists. People pay to help government and NGO research scientists collect data. In 2004, volunteers contributed $6,788,558 towards total revenues of $18,112,245 in 2004. A third of all Earthwatch volunteers have been on more than one expedition, partly because the organization funds long-term monitoring studies. Almost a fifth of

Earthwatch's projects receive funding for more than 10 years. Earthwatch charged US$1095 per volunteer for a November 2005 expedition to the Pacific Northwest to help with salmonid research. The experience included collecting data on stream geomorphology, water quality, riparian vegetation cover, and fish and invertebrate populations to document the effectiveness of restoration efforts – the likes of which are seriously needed in MABR. Ford and other corporations helped fund the work, contributing $4.5 million in 2004 (Earthwatch Institute, 2005).

Touch the Wild safari tours in Perth, Australia incorporate field-based fauna studies, sometimes involving overnight trapping and releasing of wildlife; the results are sent to the relevant authorities to provide baseline data for wildlife management in the region (Rodger & Moore, 2004). As part of Penticton's Meadowlark Festival, people pay to watch bats fly into mist nets at dusk and observe or help scientists collect data on the bats. Children and adults alike are excited to see "science in action" and to closely inspect the animals. Rather than hosting hikes and birding tours for the sake of recreation/nature education, organizations could use these to conduct inventories or monitoring for research, and to train people to enhance capacity for monitoring.

***Strengths.***

- Conservation holidays nurture a conservation ethic among participants and accomplish management objectives.
- Conservation holidays, done well, are fun, interesting and educational.
- A land trust or stewardship group's membership is a domestic market for conservation holidays.
- Conservation holidays can be marketed in schools and universities as providing work experience.

***Weaknesses.***

- If a property is significantly degraded, few people are likely to come for a holiday.

***Opportunities.***

- Conservation holidays can incorporate other forms of tourism – ethnotourism with First Nations, or ecotourism with ornithologists, for example.

***Threats.***

- A successful conservation holiday could be carried on for the sake of revenue generation rather than to meet management objectives, for example research on a charismatic species long after it is necessary is then an impact on the species without cause.

(SWOT developed with research participants; BCIT, 2004; Wall, 1997; TLC, 2004; TLC, 2005a)

***A Conservation Lottery***

UK National Lottery funds generated £150 million in four years for conservation land management (IUCN, 2000). Many U.S. states fund conservation through state lotteries and scratch tickets; Maine at the low end raised $324,000 in 2000. Colorado State Parks received $46.5 million in fiscal year 2002; the lottery is separate from the state budget and immune from cuts. Other states, such as Minnesota and Nebraska, paid lottery revenues into conservation trust funds (SERC, 2004; TNC, 2004).

Many worthwhile causes compete for lottery revenues. It would not be prudent to attempt to redirect current lottery funds as they are fully committed (Sandborn, 1996), nor to assume that a new lottery will be immensely profitable. Yet cause-related lotteries such as those linked to hospital foundations have been very successful. A scratch ticket or other lottery tied directly to conservation is likely to garner support from people interested in the cause as well as those who simply play to win.

Some consider lotteries to be taxation on the poor (CPAWS, 2002); however lotteries are commonplace in our society and widely accepted by most of the public.

***Corporate Relationships***

A local credit union helped the RDN fund McBey Creek trail bridge on Mount Arrowsmith Historic Trail. MABR forest companies help connect protected areas via trails through their lands. There are many examples of corporate support of conservation, but none so grand as the U.S. Nature Conservancy. TNC is the archetype for NGO-corporate relationships, and one that several other land trusts have tried to emulate to various degrees. In 2002, TNC, which has been dubbed “Big Green”, managed 7 million acres and owned 2 million outright in 1400 nature preserves – the world’s largest private sanctuary system. That year TNC had revenues of $972 million and 3200 employees in

30 countries. The organization is a corporation unto itself; it has global reach, consumer focus groups, meetings with world leaders, sophisticated marketing and cost-benefit analysis applied to conservation (Ottaway & Stephens, 2003). Much of the ENGO's wealth has come from corporate donations, totally $225 million in 2002 from some 1900 sponsors (Ottaway & Stephens, 2003). Of this, more than $199 million was in the form of gifts of land and conservation easements from corporations (TNC, 2003). Seats on a TNC-multi-industry International Leadership Council were available to corporations for $25,000 and up. TNC gave free memberships to corporations for employees and customers. The organization sold its name and logo to companies for its "reputational" value (Ottaway & Stephens, 2003; TNC, 2003).

In a series published in 2003/2004, the *Washington Post* wrote a highly critical expose on The Nature Conservancy's close ties with corporations, which led to TNC banning a range of business practices, restructuring its board and writing a rebuttal to help recover its image. The articles also triggered an IRS audit (Stephens, 2003; Stephens, 2004; TNC, 2003).

The *Post* revealed that TNC's board and advisory council included executives from oil companies, chemical producers, auto manufacturers, mining companies, logging operations and coal-burning electric utilities. Some of the companies faced pressure from confrontational environmental groups and government regulators for their environmentally damaging practices. One was "featured" in the film "Erin Brockovich", which paid out $333 million in damages. Critics said these board members know little and don't care about conservation, and that TNC had been reluctant to take positions on leading environmental issues such as global warming and drilling in Alaska's Arctic National Wildlife Refuge. As an example, *Post* researchers pointed to board members from Exxon Mobil, which led the Global Climate Coalition that debunked global warming and lobbied against the Kyoto Accord (Ottaway & Stephens, 2003).

TNC was also accused of misleading consumers or "greenwashing". With their logo affixed to a cereal box, people would think the cereal was produced with sustainable agriculture, for example (Ottaway & Stephens, 2003). Logo sales, or "cause-related marketing" generated more than $10 million in five years and expanded TNC's name recognition to product consumers. For example, TNC accumulated $465,000 through a

cause-related marketing partnership with S.C. Johnson where the company donated 10 cents from each newspaper coupon redeemed to the Conservancy (TNC, 2003).

Generating a wave of corporate sponsorship in U.S. parks, PepsiCo won a bid to sell pop in New Hampshire State Parks with a commitment to fund an education and awareness program (PERC, 1997). There were no park name changes, no billboards or neon signs, and employees wore the same traditional uniform. Washington State Parks awarded a contract which gave exclusive vending rights in return for a cash payment of $60,000 and other benefits estimated at $2.1 million over five years. Corporations have sponsored many events, supplied computers and paid for printed materials, provided free vehicle leasing or donations of cars, and covered the cost of park uniforms. In each case, the park agency offered little in return other than some recognition and logo placement (Barton, 2000).

There appears to be a traditional match. Corporations tend to partner with reputable non-profits which avoid vocal and controversial advocacy. They are often resource companies wanting to bolster their image and contribute out of a sense of responsibility as compensation for damage done to the environment elsewhere.

There are many types of corporate relationships. TLC initiated the Business Sponsorship Program, patterned after a similar program in Britain. Businesses involved agree to make a contribution to the organization each time a TLC member uses their services or purchases their products. In return, TLC encourages its members to attend these businesses (N. Walkden, personal communication, June 3, 2005).

TLC's *Pay at the Till* program is used to solicit $2 donations from retail store customers. A donation to TLC through Thrifty Foods offered families with students a chance to win $750 and a trip for their class to Wildwood, one of TLC's properties (The Star, 2004). The main reward for *Pay at the Till* is logo recognition (N. Walkden, June 3, 2005).

The National Environmental Treasure developed the *Ecosavers Coupon Book*, which provided discounts for environmentally friendly products and services, some of which were certified; and enclosed messages about the linkages between consumer choices and environmental impacts. Proceeds were split between NET, its partner

company TerraChoice Environmental Services (an environmental marketing agency), and the non-profit group selling the coupon book (NET, 2005b).

***Strengths.***

- NGO-corporate relationships can generate a great deal of money for conservation.
- Companies may be enticed into more environmentally friendly practices.
- There is public support for the notion of corporate sponsorship as long as advertising remains discrete – no golden arches over the entrance to a McDonald's Trail, for example.
- Costs to the organization tend to be low.

***Weaknesses.***

- Securing corporate donations requires relationships to be built, which involve a considerable investment of time in meetings and presentations.
- Some people feel that when an organization accepts financial contributions from a company it condones the business practices of that company.
- Image is a sensitive issue; NGOs can lose considerable public support if they are perceived to be well connected to the "wrong" business.

***Opportunities.***

- A certification process tightly aligned with logo sales could mitigate "greenwashing" and consumer confusion.
- The business may be able to act as a "storefront" for other fundraising, selling tickets and promoting product on behalf of the organization.
- Businesses can offer promotions where they donate a portion of their sales to the protected area.

***Threats.***

- Corporate sponsorship may create undue influence in the management of the agency or organization involved. Elected representatives often act in the best interest of corporations. To ensure policy is not altered to satisfy a corporate partner it is important that corporate donations do not become the principal source of protected area funding.

(SWOT developed with research participants; Ottaway & Stephens, 2003; IUCN, 2000; RDN, 2005a; Barton, 2000)

***Ecotourism***

In 2002, nature-based tourism accounted for one third of total provincial tourism revenues of $9.5 billion (Hagan, as cited in Dobson, 2003). In 2004, there were ~2,193 nature-based tourism businesses in the province, more than a quarter (27%) of which were operating in the Vancouver Island tourism region (Tourism BC, 2005a). Ecotourism is a subset of nature-based tourism and sustainable tourism.

Ecotourism in theory has several key characteristics. It encourages environmentally and socially responsible travel, fosters learning experiences and appreciation of the natural environment, generates funds and support for conservation efforts, and provides tangible benefits to local host communities (Stone & Wall, 2003; Weaver, 2001). True ecotourists are not passive recreationists but actually contribute to the health and viability of the environment (Kostantinos, 2001). Macpherson (2001), who is a university instructor in sustainable tourism, described ecotourism as the big picture - a vision, a philosophy and an interdisciplinary process that requires special training and education for protected area managers and their support staff, government authorities, politicians, tour operators, tour guides, travel agents, hotels, entrepreneurs, conservationists and local communities.

Ecotourism in practice is a catch-all term applied indiscriminately to almost anything linking tourism and nature. Many companies that cast themselves as ecotourism operators have few of its core values. As a result, the common perception that ecotourism promotes conservation by requiring healthy ecosystems within which to operate is simply not holding true. Few if any revenues are used for conservation management. Very few benefits are realized by local residents. In fact, most revenues from nature tourism have been used to further development or to mitigate adverse effects (New Zealand Parliamentary Commissioner for the Environment, 1997). Many ecotourists believe they are contributing to the environment, when there are in fact contributing to its degradation.

Part of the solution is likely to be certification and regulations. The Nature and Ecotourism Accreditation Program in Australia is regarded as a world leader in ecotourism accreditation (Weaver, 2001). The Saskatchewan Nature & Ecotourism

Association (SNEA, 2003) began to certify ecotourism businesses in that province. So far there is nothing comparable in BC, and tour operators are unlikely to seek certification unless it is necessary or advantageous to do so. Accreditation could be tied to tenure. Ecotourism operators are frustrated by a lack of secure long-term access to the land base which limits their ability to apply for loans and develop their business (Tourism BC, 2005b).

The Kite Country project in Wales is an example of community-based ecotourism. A series of 18 interpretation panels were established across the area, each spotlighting a different aspect of the countryside and its wildlife. All-weather viewing facilities were established to increase opportunities for attracting visitors in winter. The use of video technology enabled viewing of birds without posing a threat of disturbance. Energy efficient transportation was a significant part of the project's message. As a result of the project, breeding success among the Red Kites has been enhanced, and visitors have lengthened their stays in the community (Birdlife International, 1997).

TLC hosted several sold-out nature cruises in 2005; a July tour to Race Rocks on a 41 foot luxury yacht garnered $59 per person (TLC, 2005c). The VIWMP is developing an internet-driven Wildlife Viewing Network; properties have been inventoried for their ecotourism potential, a business plan has been developed, and several tours have been conducted (Jenner, 2002a; Jenner, 2002b).

***Strengths.***

- Ecotourism is consistent with the popular philosophy that intensive tourism should be located outside of protected areas.
- Ecotourism is a type of "soft adventure", which as a trend is increasing in popularity.
- Retirees and seniors show strong interest in nature-based activities and travel and are expected to be a very large potential market for leisure experiences provided by protected areas – not only as consumers but as volunteers and financial supporters.
- Ecotourism will draw visitors to lesser used protected areas, perhaps reducing congestion at heavily used sites.

- Ecotourism operators have an incentive to prioritize conservation as people will not come to see areas that are more compromised than their own places of residence.
- The tourism industry is very important to the economic well-being of BC. To sustain market share, it is necessary to preserve natural values in protected areas at least as well as competitors.
- Ecotourism industry operators should have self-interests in the health and protection of the environments they use.
- As ecotourism focuses on a value-added product rather than increasing sheer numbers of visitors, it minimizes density dependent frustrations for local residents such as crowded protected areas (in comparison to mass tourism).
- More tools are becoming available to direct ecotourism ventures. For example, Parks Canada developed a National Messages Framework and Guide to be shared with tourism operators which emphasizes the ecological integrity mandate.

***Weaknesses.***

- The small sizes of groups and visits required to ensure minimal ecological impacts and high quality experiences also minimize profits unless prices are very high.
- For most ecotourism, there are no standards or regulations, and no accreditation or training opportunities for operators.
- The introduction of tourists to areas that were previously seldom visited by outsiders will place new demands on the environment.
- The average ecotourist may be more demanding environmentally than the mass tourist who may not need to visit endangered species in remote locations, and whose needs and wastes can be more readily planned for and managed.
- There are few places to spend money in the wilderness.
- Tourism is a highly competitive industry.
- Ventures can take a long time to become viable, and without accountability conservation principles may be compromised just to stay in business.
- Even previously successful tours may flop because they suddenly conflict with other events.

- Developing and organizing tours is time-consuming and success often comes after a series of trials and errors.
- People involved in ecotourism tend to be business people or naturalists but not both.
- Wildlife viewing etiquette and other guidelines to quell environmental problems resulting from ecotourism tend to be instituted post hoc. The OTA "ecotourism policy" is a case in point, as it does nothing to explain what ecotourism actually entails.
- Some nature tour operators already prefer to travel to the west or north island for a more pristine wilderness experience and to maximize their opportunities to see wildlife.

***Opportunities.***

- Distinctions between ecotourism and more conventional tourism are blurring and markets are converging; the conventional mass tourist is becoming more environmentally and socially conscious.
- Corporate sponsors may be willing to pay for junior naturalists or others to attend eco-tours.
- Ecotourism revenues in both Asia and Latin America have seen a dramatic downturn due to global security concerns. The volatility of these international ecotourism markets may create opportunities for this region as ecotourists seek safer places to go.
- There are numerous international environmental awards available that managers and others can apply for. These attract media coverage, travel writers and television documentaries.
- Private conservation areas adhering to a quota system with entry fees have raised significant funds for conservation management, protected ecological integrity, and allowed for quality nature experiences. Ramsey Canyon in Arizona, owned by TNC, is one example of such a site.

***Threats.***

- Tourism often declines due to factors outside the control of protected area managers or tourism operators. Extreme natural events, global warming, and fear of disease present challenges to tourism and ecotourism in particular.
- If the demand exists or can be created, it will be difficult to resist taking more customers. Thus when ecotourism becomes popular, it often loses the "eco" component, growing into a less sustainable form of tourism.

(SWOT developed with research participants; BCIT, 2004; Eagles, 2003; Wall, 1997; Weaver, 2001; Lindberg, 2001; Ethos, 1988; CPAWS, 2002; WTA, 2002; IUCN, 2005; COTA, 2002; Careless, as cited in Dobson, 2003; Parks Canada, 2001)

***Environmentally Harmful Products Payments***

The "polluter pays" principle requires the legal person who is responsible for causing the introduction of harmful substances into the environment to bear the cost of prevention and control measures. This usually implies a direct relationship to "internalize externalities" to society, e.g. a tax on pesticides might be used to fund water quality testing or a duty on exotic plants and animals could be used to pay for invasive species management. There are many opportunities for levies on harmful substances or materials.

Washington State litter and recycling programs, including those associated with parks, are funded by a 0.15% tax on industries that sell, manufacture or distribute products and packaging that tend to become litter. Businesses and industries actually proposed the tax on themselves, which is noted to have had no traceable impact on consumer prices. In the late 1990s it generated $507 million per year. Nebraska, New Jersey, Ohio, Rhode Island, Tennessee and Virginia have similar legislation (Washington State Department of Ecology, 2005). Many European countries have imposed taxes on packaging. Poland, for example, charged an excise tax on plastic packaging of 10-20%. These taxes are not intended as revenue generators, but as economic sanctions; many of their proponents would be happy if they raised no money at all (European Organization for Packaging and the Environment, 2000; Ecotax, n.d.). In fact, Germany requires industry to be responsible for its packaging to the end of their life cycles, including the costs of collecting, sorting and recycling after consumers discard them (Inform, 2005).

Sandborn (1996) raised the idea of Pop for Parks. If a consumer buys a beverage in a recyclable container, he or she pays a deposit which is refunded when the container is returned for recycling. If the consumer fails to return the container, the deposit contributes to the revenue stream of the beverage producer. The producer receives revenues from the sale of recovered product and any eco-fees charged at the retail level. Unredeemed deposits represent a great deal of money, even with a 2004-05 recovery rate of 81.3% (MOE, 2005). Although the current system creates an incentive for the beverage industry to discourage the return of containers, redirecting the unredeemed deposit to protected areas creates a "conservation" incentive to avoid returning them! It is much more appropriate that some of these funds be directed to waste management.

***A Management Endowment***

Environmental trust funds have been set up in many countries as a way of managing funding for protected areas. From 1990 to 2000, such funds were established in more than 30 countries with combined assets of more than US$500,000,000 (IUCN, 2000).They are typically launched in conjunction with large, one-time contributions from donor agencies (IUCN, 2005). Most are set up as endowments, where the interest or investment income is spent each year while the original capital remains fully invested. Some are revolving funds that continually benefit from a revenue stream. Belize' Protected Areas Trust Fund is supported by a conservation fee imposed on foreign tourists, for example (IUCN, 2000). In Vermont, revenue from profit centres such as ski hills are placed into a park fund, with a portion set aside in a revolving fund to be used when revenues are low or there are special issues (PERC, 1997).

The notion of an endowment for conservation management is very popular among protected area managers. DUC has established a fund where the interest generated from a portion of national funds is used to support baseline project management (L. Bogdan, personal communication, August 24, 2005). The RDN (2005a) hopes to establish an endowment for "development, operations and maintenance of the parks and trails system, supported and promoted by a volunteer group with administrative assistance and oversight by the regional district". Nichola Walkden (personal communication, June 3, 2005) emphasizes that TLC's financial obligation to the land they manage is long-term (e.g. 150 years) and therefore endowments for every property would be ideal,

guaranteeing a steady management stream which is never questioned, threatened by political will or changed by public opinion or bias.

In late 2004, the BC Wildlife Federation introduced the notion of a Game Species Management Trust Fund for monitoring and assessment, as limited MWLAP funds had been redirected to species at risk (BCWF, 2005). There have been many cases of U.S. state governments initiating environmental trusts to later cut appropriations to government conservation agencies. The agencies were then forced to rely on unpredictable and fluctuating revenue generation programs such as environmental license plate sales and income tax check-offs (TNC, 2004; SERC, 2004). There is some concern among research participants that the BC Trust for Public Lands will result in the discontinuation of the annual $5 million parks acquisition fund. In contrast, RRU's Ann Dale is helping create The National Environmental Treasure (NET), a "people's trust fund" without strings to government or private interests. The NET is devoted to enhancing the core capacity of small and medium-sized environmental organizations working at a community or regional level (NET, 2005a).

According to research participants, a trust to accept donations and other monies for management of BC Parks has been under consideration. Because of competition, several land trust representatives were strongly opposed to the idea.

In contrast, the Habitat Conservation Trust Fund receives most of its money from hunters, anglers, trappers and guide-outfitters through license surcharges. Funds are disbursed to habitat conservation projects managed by provincial government agencies, First Nations, local governments, non-profit groups, universities and individuals (HCTF, 2005). The $5 million HCTF is intended to supplement rather than supplant government, and the board is ever mindful of where the monies have come from (B. Springinotic, personal communication, September 12, 2005). The Muskwa-Kechika Management Area (MKMA) trust is another legislated trust fund. MKMA supports conservation in north-central BC. The provincial government contributes $2 million to the trust fund annually and matches financial contributions from external organizations to a maximum of $0.5 million (MKMA, 2005).

***Strengths.***

- The trust may be used to leverage other funds.

- A fund's board of directors is limited in its choice of what projects and activities to fund by the terms of a legal document establishing the trust, providing assurance to donors that the money which they contribute will be used only for the prescribed purposes.
- People do not typically donate to taxing authorities; a trust outside of government is a way to tap into donor funds.
- The government may provide direction through the trust agreement. In addition, all projects would require approval through park permitting and environmental assessment channels. In these ways Parks professionals may maintain a degree of quality control and have input into the types of projects that should be undertaken.

***Weaknesses.***

- The money still has to come from somewhere. A trust in itself does not generate revenue, rather it is a vehicle to hold and disburse funds.
- Accumulating money for the trust would add to the significant problem of an overly competitive funding environment for non-profit groups.
- As parks are operated by private businesses (i.e. PFOs), many people may be reluctant to contribute for the same reasons they are disinclined to volunteer.
- Direct competition with land trusts and stewardship groups for donor dollars is likely to destabilize existing partnerships.
- Administrative costs are likely to be high, particularly if the fund's capital is small, reporting requirements are complex, or if the fund provides for technical assistance in design and implementation of projects.
- Investments may generate low or unpredictable returns.

***Opportunities.***

- The fund will create a market for park conservation, i.e. opportunities for individuals, groups and businesses hoping to profit through conservation management projects.
- If donations were disbursed in the same region they are collected, and people could see that they personally benefit from the fund, they may be more likely to contribute.

- A trust can strengthen civil society, through NGO representation on the trust fund board and through direct funding.
- A voluntary check-off on income tax returns could be used to build an endowment.

***Threats.***

- Public outcry over parking meters suggests that any changes to the "public trust" function of parks would be met with considerable opposition. The trust fund is likely to be perceived as government downloading or a privatization ploy.
- Government may conclude that there is no further need to be concerned about resources in that area when in fact the fund may yield far less than what is needed to support conservation management.
- As volunteer stewardship groups often lack in-depth ecological knowledge, projects undertaken by such groups may be too small or inconsequential to benefit conservation values in the long term. Mentorship or supervision by professionals is costly, and the government does not have the capacity to assess reports for financial or ecological accountability.

(SWOT developed with Cooper & Vargas, 2004; IUCN, 2000; WWF, 2003)

***Mutations of Donations***

There are many creative ways of securing donations. Many tap into people's sense of community, and some generate more awareness than they do revenue. Most are time-consuming and reliant on volunteer help. Success appears to be contingent on luck as much as it does planning, yet these initiatives are inspiring and valuable to the overall revenue generation portfolio.

***Festivals and other events.***

Festivals conjure up images of people working together to celebrate community. The fifteen year old Brant Festival, the brainchild of the Mid Island Wildlife Watch Society (MIWWS), represents one of the few occasions where businesses which benefit from protected areas contribute to conservation. Designed to promote conservation education and awareness, the festival celebrates the return of the Black Brant, which come into the area to rest and feed en route to their breeding grounds in Alaska. It has included well over a hundred volunteers supporting a world class carving competition, a

First Nations artisans show, an unnatural nature walk, wildlife viewing tours and much more (C. Dodd, personal communication, June 28, 2005). Over the past few years, MIWWS, TNT and Malaspina College have worked together to minimize disturbance to the birds, particularly with respect to dog-owner education. Profits support the management of the PQBWMA; in 2003 this amounted to $3000 – a small sum considering more than 4000 people from all over North America attended various festival venues (MIWWS, 2004). Surveys showed non-resident visitor expenditures to be $620,558 in 2003, $783,823 in 2004, and $684,564 in 2005 (Jenner, 2005). Yet surveys appear to have been unsuccessful in demonstrating the value of the festival to local politicians and many business owners. Just as protected areas derive few benefits from their exploitation as attractions, project participants indicated that raising the $40-70,000 necessary to run the festival is always a problem. A lack of financial support from local councils, the OTA and other businesses is aggravated by their promotion of activities which conflict with conservation. This one festival celebrating the rich conservation values in Oceanside was nearly cancelled for 2006.

Events are popular as they engage volunteers and are often used to garner support for a cause. The RDN held a Poker Run to raise money for Top Bridge; walkers, runners, cyclists, and horseback riders picked up cards for their poker hands as they cruised through the trails that would connect to the bridge. TLC recently held a 4$^{th}$ annual paddle-a-thon which in its first three years raised more than $30,000; corporate sponsors such as Mountain Equipment Co-op and Ecomarine Kayak contributed to its success (TLC, 2005d). Several NGOs hosted musical events and duck races. TLC's Antique Road Show had people pay $30 to tap into the expertise of volunteer appraisers (N. Walkden, personal communication, June 3, 2005). The Salt Spring Island Conservancy held an Eco-Home Tour, which sold 400 tickets at $25 each and drew a great deal of interest from the media in Victoria and Vancouver. The Conservancy has enough willing homeowners to support another event in 2006 and has accumulated considerable expertise in green building (K. Hudson, personal communication, August 4, 2005). DUC is often considered the model to aspire to for events success, a single dinner/auction raised more than $52,000 for local wetland conservation (Ducks Unlimited Oceanside, 2005). Most dinner auctions are not as successful, and there is plenty of competition;

Blaine Sepos estimated there is one nearly every weekend in Oceanside (personal communication, July 29, 2006).

Festivals and other events can challenge the tender-hearted as they may involve a tremendous amount of work for very little revenue as a result of many factors, such as an unexpected conflict with another event or poor weather.

***Memberships.***

For some NGOs, most of their funding comes from memberships and membership donations. Membership allows people to feel like they're part of something significant. According to Nichola Walkden (personal communication, June 3, 2005), TLC's "$35 membership… is the most important $35 you'll get". It shows a commitment and provides the organization with an audience while strengthening its credibility and its voice. It allows the organization to stay connected to the community and be responsive to their priorities. It enables people who cannot volunteer to participate in a meaningful way. And it's renewable (Fawcett, 2005). TLC went from 5 members in May 1997 to nearly 4000 in May 2005 (Turner, 2005). Membership revenue jumped from $56,000 in 2003 to $98,000 in 2004 (Alexander, 2004). Salt Spring Island Conservancy makes $10,000 a year with an annual appeal letter to its membership. The Conservancy has found that simple member perks, such as a members-only raffle at its educational lecture evenings, have been very successful in increasing membership (K. Hudson, personal communication, August 4, 2005).

***Commemorative giving.***

People who donate to the construction of Top Bridge will get their name on the bridge. There are many examples of targeted donations for facilities, trails and signs. Many NGOs offer opportunities to Adopt an Acre, Adopt an Animal or Sponsor a Project, in return for a certificate of acknowledgment. Some sell "deeds" to parts of protected areas. These initiatives work particularly well for organizations and protected areas that already have an established audience to market to, such as a membership or a store clientele. The best results come from follow-up with donors (IUCN, 2000; IUCN, 2005). The gesture often creates an obligation to maintain the commemorative label and its gift in the long-term.

***The money tree.***

In a half hollow tree in McMillan Provincial Park, a steel vault accepts donations to improve the park. It has funded trail improvements, fencing and plans for new signage. Dave Forman (personal communication, August 4, 2005) believed the success of the Money Tree was very site-specific, relating to an abundance of international visitors and the fact that there were no user fees at McMillan; attempts to duplicate it at Rathtrevor Park failed.

***Innovative ways to use the Internet.***

Protected areas could benefit from the simple click of a mouse. When people find The Hunger Site (http://www.thehungersite.com), a sponsor or advertiser contributes food to the United Nations Food Programme. Site sponsors are interested in the advertising and public relations benefits of the site. Protected areas could enlist sponsors such as tourism or outdoor equipment companies (IUCN, 2000).

***Outdoor Recreational Equipment Sales Tax***

Consistent with a user pay philosophy associated with wildlife viewing, some have suggested a tax on outdoor recreational equipment to pay for conservation (DiSilvestro, 1998). In fact, Teeming With Wildlife, a U.S. initiative spearheaded by the International Association of Fish & Wildlife Agencies and supported by many other large and influential environmental organizations, attempted to secure a national surcharge on outdoor recreational equipment at the manufacturer level. Although the effort failed to bring in the surcharge, it raised awareness and managed to garner more funding in appropriations for wildlife conservation (International Association of Fish & Wildlife Agencies, 2005). In Texas, a sporting goods tax generated $32 million in 1996, its annual cap (TNC, 2004). This tax, however, was not a separate tax that required additional record-keeping. Rather it was the portion of the sales tax attributed to recreation equipment (Sandborn, 1996). Other states apply a portion of their sales tax to conservation. One eighth of Arkansas' sales tax is committed to conservation. In Missouri one half of 1% of the sales tax is dedicated to the state's parks and Clean Water Initiative and a further 1/8 of 1% goes to the Department of Conservation (TNC, 2004). In B.C., Sandborn (1996) found sales tax revenues were fully committed and that the tax rate was already perceived as high.

***Parcel Tax and Development Cost Charges***

In the MABR, a RDN Parks parcel tax was introduced in September of this year. The City of Parksville changed its Development Cost Charge (DCC) bylaw to be able to collect money for parks any time development takes place, rather than when land is subdivided for housing development (R. Longmuir, personal communication, June 2, 2005). While the DCC and the parcel tax will likely be directed to park acquisition, some monies may be freed for operations or management of local and regional parks. Any other changes to local government taxation for the benefit of protected areas will be perceived as inappropriate.

***Payment for watershed services***

Most of the region's protected areas are associated with streams, estuaries or wetlands. Trevor Wicks, a founding member of the Arrowsmith Watersheds Coalition (personal communication, June 16, 2005) identified numerous threats to water quality and hydrological integrity in the area's watersheds including some most people take for granted such as ditching to drain roadways. Indeed, the changes people have made to water flow are known to be the greatest threat to freshwater (TNC, 2005, October). Failed septic systems, landfill runoff, leachate from old vehicles and pesticides are only some of the impacts on water quality in the region. Extensive development in the lower parts of the watersheds has included draining and filling of wetlands (as wetlands are not protected in BC), large increases in impenetrable surface areas and deforestation resulting in more runoff and less infiltration. Together with ever-increasing water consumption, these contribute to dropping water tables and in Rathtrevor Provincial Park there is evidence of saltwater intrusion. Runoff degrades drinking water quality and habitats for fish and other aquatic species, by scouring streambeds and contributing to sedimentation and increased levels of contaminants. Without forested riparian areas to provide shade, and wetlands and broad riparian zones to capture, hold and slowly release water, the area's frequent summer droughts create low water/high temperature stream conditions which can prevent salmon from spawning and kill fish.

The predicament of Craig Creek is typical of many fish-bearing streams in the area. The creek is associated with two small protected areas - an old growth riparian area and a park along the estuary. Two diversions on private lands in the area have reduced

flow; one redirected water for a trout pond, the other a gravel pit. A forestry company situated a logging road over it. Two large developments within walking distance of the estuary have earned reprimands by DFO for their proximity and runoff into the creek and still the degradation continues. One of these developments remains without formal approval over problems with sewerage. A third development will begin construction in the fall of 2005; the use of the estuary park is anticipated to be far greater than the property can sustain and still retain its conservation values. Craig Creek runs into Craig Bay, which is part of the PQWMA. Craig Bay is subject to runoff from new development and numerous failed septic systems. The mud flats are littered with introduced species.

In another example, Parksville Mayor Randy Longmuir (personal communication, June 2, 2005) is concerned that the city's aquifer is at the mercy of upstream development, almost all of which is outside city boundaries. The first of three parts of the *Forever Green* residential development is now on the doorstep of the City's main water source and one of the City of Parksville's only nature parks. Each of twenty 5 acre lots is allowed two houses, none of which will be connected to a sewer system. Longmuir's greatest concerns are long-term maintenance of the septic systems and the direct drawdown on the aquifer. The long-term fate of Ermineskin or "Springwood" Park is uncertain.

In fact, water was the most frequently discussed management issue among research participants, indicating a sense of urgency and willingness to find solutions. The Drinking Water Protection Action Plan produced by the RDN in 2004 identifies the problems but does little to advance development of any solutions (RDN, 2004). There is a great deal of interest in integrated watershed management planning, mainly to have more say in upstream activities. Such planning could be partly financed by a Payment for Watershed Services mechanism. In MABR and in most places in the world, water prices typically reflect only the costs of treatment and delivery, if people pay anything at all. Yet in an emerging global trend, water users are paying for the protection of their watersheds, often through a fee or tax. Payments are used to fund management activities in and around protected areas. These monies also pay landowners for conservation easements or to implement "best practices", fund education programs, and contribute to purchases of key parcels in the watershed.

***Strengths.***

- Water was the most frequently discussed management issue among research participants, indicating a sense of urgency and willingness to find solutions.
- The mechanism would encourage more participatory and cooperative institutional arrangements of broader benefit, i.e. integrated resource planning at a watershed or landscape scale.
- The mechanism may provide a sustainable source of financing for protected area management on a regional scale.
- External threats to protected areas may be mitigated by focusing on protection of the entire watershed.
- Concerns for water scarcity and water quality already exist and may motivate users to be willing to pay for watershed protection.
- Human health concerns can be used to protect water for other users of the resource.
- Ownership of water and most streambeds is vested in the provincial Crown. However, decentralization has given local governments more control over fee and incentive decisions. Qualicum Beach can use their water monies, including the water rate and DCCs to acquire lands and take other action to protect water (T. Westbroek, personal communication, July 26, 2005).
- A contingent of NGO volunteers is already engaged in watershed education and will continue to do so with support. These include the Arrowsmith Watersheds Coalition Society, Mid Vancouver Island Habitat Enhancement Society (current Community Clean Water Initiative/ Pledge Program), Englishman River Watershed Recovery Team and others. Most feel much more needs to be done to protect water in the area.
- Considerable scientific and other information to support the development of the mechanism has already been gathered.
- Management associated with the mechanism is likely to improve water quality and re-establish natural flow regimes. It may also reduce secondary costs of filtration and sediment control as well as health costs.

- Charges for water, particularly those that increase with usage, are known to encourage water conservation.
- Implementation of the mechanism may result in improved regulations and legal structure for protection of water and watersheds, such as wetland and groundwater protection. New regulations create incentives for finding more cost-effective ways of meeting the standards they establish.
- Use of the mechanism will build capacity in communities such as the development of skills in sustainable land use practices.
- Developing and implementing the mechanism will improve scientific understanding and promote recognition of the economic and ecological value of watersheds.
- A payment for watershed services strategy is based on the premise that nature's services are more efficient and effective than high cost substitutes such as dams and filtration plants.
- The mechanism may help to promote a conservation ethic. People may be motivated to assume responsibility for the health of aquatic ecosystems if they know the state of them and how they are linked to human activities.
- The RDN is currently reviewing its water pricing structure.
- The mechanism might render unnecessary any need for the City of Parksville to move its intake infrastructure further upstream, saving money and maintaining the impetus to keep the lower reaches pristine.

***Weaknesses.***

- Because financial support for protected areas is only one objective for the mechanism, funds may be directed to more pressing concerns.
- Overall water use may decline as a result of conservation efforts, which will decrease revenues generated from water fees.
- Success of the mechanism depends on the willingness of land use decision-makers with jurisdictional and legal authority to be involved, including but not limited to leaders from MOE, MOF, MOT, DFO, TNT, RDN, Parksville and Qualicum Beach.

- Current environmental laws, regulations and enforcement are inadequate to support an ideal form of this mechanism. Changes to legislation or policy may be needed, including creation of or increases in water fees; the ability to apply water fees to watershed protection; the means to provide incentives to landowners; the ability to apply and enforce conservation easements; establishing oversight, monitoring and regulation compliance mechanisms; or implementing fines for non-compliance.
- Data and analysis may be required to clearly demonstrate the relationship between protected area management and the quantity and quality of ecosystem services provided.
- Extensive research and intensive negotiations may be needed to establish the amounts that will be paid to private landowners and/or private or public resource managers (and not all will respond to the same economic incentives).
- Ongoing administrative and transaction costs may be high.
- The complexity of watershed management problems makes it difficult and at times impossible to obtain complete information linking causes and effects and to measure impacts.
- The development of the mechanism is a slow, involved and expensive process.
- For agreements with private landowners other than land trusts, opportunity costs of forgone land uses may be too high.
- The population in MABR may be too low to fully support protected area management.
- Per-capita/household funding may be insufficient without the inclusion of the City of Nanaimo.

***Opportunities.***

- The Arrowsmith Water Service could facilitate this mechanism; it is a partnership between the RDN, City of Parksville and Town of Qualicum Beach.
- The impetus for the MABR grew out of volunteer efforts to protect the Englishman River estuary. The biosphere reserve was seen as a vehicle to promote overall watershed management (Fraser, 2002); therefore the MABF is a potential facilitator.

- The Englishman River is the second most endangered river in the province, according to the Outdoor Recreation Council of BC. With education, the public can link “endangered for fisheries” with “endangered for human health”.
- Qualicum Beach Streamkeepers are initiating a watershed management plan for the Little Qualicum River.
- NGOs can play an important role by monitoring the watershed and ensuring there is accountability for allocation of funds.
- The mechanism may help to mobilize other resources, particularly when management actions are deemed effective. In Mexico, a municipality is charging an extra voluntary fee for urban water use that goes into a trust fund for water management (Ellison & Hawn, 2005).
- Funding for prevention or mitigation as an investment in the future has traditionally been a low priority – particularly in this era of reactive or fire-fighting approaches to management. Many people have recognized the failure in this approach, particularly in matters related to health and environment.
- Management could be used to ensure equity within the payment mechanism. For example, corporations that have damaged the watershed such as forest companies could be encouraged to sponsor low income residents.
- If the money coming from the users is directly linked to conservation undertaken by private landowners, the users will hold the landowners accountable. Social pressure can help to ensure good management.
- A $7 million Living Rivers Fund announced by the BC government in 2004 may be a complementary source of revenue. The fund is intended to provide support for enhancement, research and restoration projects in watersheds. It is also meant to fund projects that increase enhance the effectiveness of community organizations, increase public awareness, strengthen partnerships and encourage the sustainable use of water.

***Threats.***

- Care needs to be taken in order to ensure the mechanism is equitable and does not exclude those less able to pay. This could be accomplished by applying a limit for consumption below which a household would not have to pay.

- Private delivery of water can introduce competition and a need for profit, whereas collaboration is what is needed and most or all “profits” must go to watershed management.

(SWOT developed with CFA, 2002; IUCN, 2005; RDN, 2005b; LWBC, 2005; MWLAP, 2004, September 25)

***Cases.***

Costa Rica: Payments for watershed services provided direct monetary compensation to the Braulio Carrillo National Park and private landowners for their investments in forest protection and restoration in key points of the watershed. An additional fee of US$0.05/$m^3$ of water consumed was charged on the monthly water bill, and participating landowners received a payment close to US$70 /hectare/year for protecting water sources. This amount represented the opportunity cost of land use in the upper watershed, obtained through estimates of revenues from traditional land-uses, and the value that local residents gave to the provision of water as an environmental service. The financial contribution of water users to compensate for the costs borne by the national park and landowners for forest conservation offered a high-benefit / low-cost investment strategy based on a socially equitable "user-pays" principle. The initiative was fully independent in administration and funding, and did not rely on government or external funding for its operation (CFA, 2002).

New York: In the early 1990s, the Environmental Protection Agency notified New York City that to maintain water quality standards it would have to construct a US$5 billion filtration plant. US$300 million a year would be necessary for operating costs. However, an alliance between federal, state, municipal governments and local communities decided to invest US$1.5 billion over a 10-year period in management of the Catskill/Delaware watersheds. National, state and local governments provided supplemental funding at later stages. Management activities included land acquisition, rehabilitation of septic systems, flood control measures, environmental education, stream corridor protection projects, and new regulations on the use of water. A Watershed Agricultural Council was formed to support the improvement of land use practices as well as economic development of local communities. The non-profit Catskill Watershed

Development Corporation administered the program locally in the upper watershed areas (CFA, 2002).

Mexico: In Sierra Gorda Biosphere Reserve, US$30-40 per ha was paid out of general water revenues to certain residents who agreed not to exploit forest on their property and to advise the government within 30 days of any event they witness which might harm the trees. These were 5 year contracts that were paid annually as long as 80% of the canopy was retained. Eligible residents were chosen using criteria which include extent of remaining forest canopy, threat to continued existence, and proximity to downstream communities of 5000 people or more. The payments supported water quality preservation, sediment reduction, flood prevention, drought alleviation, maintenance of aquifers, minimization of runoff during heavy rains, and conservation of springs. The same non-profit that led the creation of the biosphere reserve had 12 monitoring sites where scientists from a nearby university measured water flow, filtration and soil quality. The researchers used these data in conjunction with climate variables and soil properties and vegetation cover at each site to model hydrological processes throughout the reserve. Monitoring of compliance was accomplished by paid land stewards using satellite imagery and on the ground with the help of the non-profit group (Ellison & Hawn, 2005).

***A Portion for Revenue Generation.***

Low impact use of a small portion of the protected area can successfully generate revenue for the entire area or network of areas. Rogers Cantel pays CWS an annual fee to maintain a cellular phone tower, with a small footprint and impact (D. Smith, CWS, personal communication, July 13, 2005). TNT and TLC hold tenanted dwellings. NALT uses a portion of a gifted property to maintain a plant nursery. Gail Adrienne (personal communication, June 15, 2005) commented that advisors to NALT instructed staff to never take on a covenant unless they could generate some revenue – by developing or selling off a tenth of the property - to pay for the perpetual monitoring. The tactic of using or selling a portion of an acquisition to allow for proper management of the remainder is a common one, particularly in the U.S. But it may not be without a price; TNC was audited by the IRS for selling tracts of land to significant donors and board members for low prices, and was criticized by the *Washington Post* for its failed investments in for-profit businesses (Ottaway & Stephens, 2003).

### *Products*

There are many different products sold to benefit conservation, in a variety of venues.

#### *Plates for parks.*

In the U.S., license plate sales have been a common way to raise money for conservation. In the 1960s, revenues from RV plates were dedicated to parks (PERC, 1997). Today there is an active collectors' market for conservation license plates (Stratton, 2005). In Indiana, the environmental plate was the number one selling plate out of 48 special plates, generating $1.8 million from an additional cost of $40 per plate. In New York, $100,000 annually from 200 different plates contributed to an Environmental Protection Fund. In Ohio, four different programs were funded by different license plates: the Lake Erie Protection Fund Plate, the Scenic Rivers Plate, the Bald Eagle Plate (which funded bald eagle management), and the Wildlife Plate (which contributed to the Diversity and Endangered Species Fund (TNC, 2004). However, in some states, competition with other plates has led to declining revenues. And in some areas the novelty has clearly worn off.

In B.C., personalized license plates cost $100 and an annual fee of $40 to maintain rights to the slogan (ICBC, 2004). In 1994/95 the revenue from custom plate sales was $532,000 (Sandborn, 1996); there are many more personalized plates on the road today. Conservation license plates would be much cheaper to produce than personalized plates, and they would be novel in B.C.. In Georgia, environmental license plates generated $6.3 million in the first year of operation, and were the primary funding source of the state's Department of Natural Resources Wildlife Division (TNC, 2004).

#### *Firewood.*

Firewood sales have a conservation purpose. Carol Beaupre of Osprey Park Operations found that when firewood was free, air quality was poorer, and people would build bonfires in the campground and leave them burning without attention even when forest fire risks were high, or load up with wood on the way out (personal communication, September 7, 2005). The downside is that firewood sales promote scavenging for wood in the park, resulting in trampling and removal of habitat.

***Protected area game.***

The IUCN Centre for Mediterranean Cooperation designed a table game for youth called Mediterranean Protected Areas, to raise awareness around the benefits of species conservation and ecosystem management and threats such as climate change and pollution (IUCN, 2004).

***Catalogues.***

TLC's Green Gifts Catalogue enables shoppers to "give a gift that gives twice". The catalogue can be found on line and in paper form. One of its most creative offers is a TLC logo pin – a sterling silver Harlequin duck rendered by a Victoria artist (TLC, 2005b). The Parks Company National Parks Catalog features items carrying various U.S. national park logos; items are available by phone or on the Internet. The company is clearly an advocacy group in itself. It campaigned to *send a photo, save the parks,* and hosts a variety of surveys and other supporting information on its website. The site actively promotes a connection to park values through web cam and other parks links and even has a collection of park quotes. From 1997-2000, the company had not shown a profit, but had donated 5% of all sales to the parks amounting to more than $25,000 (The Parks Company, 2003).

***Stores.***

Abkazi Gardens is a TLC property within the City of Victoria. While some might question why a wildland trust would acquire such a property, the gardens provide a venue for TLC to deliver the conservation message to some of the wealthiest people in the city, and to generate revenue through events and products (many of which are also sold through the Green Gifts Catalogue). Osprey Park Operations in Rathtrevor Park has a gift store within their nature house, and also sells product at the campground office. Louanne Ralston (personal communication, June 30, 2005) operates Pacific Rim National Park's gift store, which has generated over $100,000 per year. Nearly every month, sales increased, even when visitation declined. Ralston focuses on offering products specific to the park and to conservation, such as logo pins affixed to cards delivering an ecological integrity message, and posters depicting the park's Species at Risk. Store employees are trained to deliver park interpretation information. Ralston, who has private sector business experience, explained that the government was challenged at first to understand

the idea of cash flow to allow a continuous stream of inventory. In general, governments have shown increasing levels of interest in revenue generation through product sales. The RDN (2005a) would like to sell maps of parks and trails in the region. BC Parks is looking to exploit its "very saleable logo" in ways that do not cheapen the brand (D. Forman, personal communication, August 4, 2005).

***E-Auctions.***

NET sold water colour paintings via an e-auction (NET, 2005, spring). Several years ago, an entrepreneur initiated an e-auction business catering to non-profits in the Nanaimo area but it never flourished.

***Resource Extraction***

Revenue generation from resource extraction will contribute to financial sustainability only if the extraction activities are themselves sustainable and are compatible with other protected area management goals (IUCN, 2005).

***Timber.***

Only selective logging associated with habitat enhancement, or an accredited demonstration project in second growth forest is likely to be perceived as appropriate on protected areas. Wildwood is often cited as the forestry model to aspire to. TLC and the Ecoforestry Institute Society purchased the land that Merv Wilkinson sustainably logged since 1938. Wildwood now generates revenue from visitor tours and workshops as well as from the working forest (TLC, 2005f).

In contrast, TNC bought 185,000 acres of Maine forest from International Paper for $35 million, and then logged 136,000 acres to offset costs, attracting the attention of the *Washington Post* (Ottaway & Stephens, 2003). TNT discovered that any mainstream resource extraction activities associated with protected areas can invoke negative publicity. When the organization removed trees from a property in the Kootenays which required thinning to restore wildlife habitat, the nature of public sensitivity and misconceptions associated with such a project became clear. In addition, timber sales did not meet revenue expectations (D. Kennedy, personal communication, May 19, 2005). The mechanized extraction of the trees and their sale to the big mainstream timber companies may have been points of contention with the nearby community. In Germany, a natural forest campaign replaced heavy timber harvesting with working horses and

human labour. The resulting timber was of higher quality and value due to slower growth and lack of damage by machinery; there were no planting or chemical costs; there was no blowdown from clearings; value was added through eco-labeling; and the forests maintained high recreational values (Birdlife International, 1997). Here at home, the Vancouver Island Ecoforestry Group makes Forest Stewardship Council certification more accessible to small-scale managers, and provides marketing support and linkages to high-profile green development projects (Ecotrust Canada, n.d.).

Within government, how revenues are managed may be as important as the extraction and marketing processes. In BC parks, timber may be extracted for various reasons such as fire control at urban interfaces. According to research participants, a recent Treasury Board decision allows MOE to retain revenue derived from timber harvesting in BC parks and spend it on conservation. So far the agency has not been able to overcome the requirement that the funds be spent in the same fiscal year. Other participants believed a partnership with a foundation or ENGO may be able to circumvent this obstacle.

***Non-timber products.***

Protected area managers currently see most non-timber products as a management problem, not as a source of revenue. Harvesters trespass to collect mushrooms, plants and mulch for flower shops and landscaping, wild berries and fruit, seeds (to sell as native seed packets), Christmas trees, firewood, supplies for crafts, and natural ingredients for medicines, essential oils and biocides (Forest Practices Board [FPB], 2004). Non-timber forest products (NTFPs) are big business. In 1997, NTFPs in BC generated ~$280 million in direct revenues, $680 million in provincial revenues, and employed 32,000 people (Wills & Lipsey, as cited in FBP, 2004). The total market value of non-timber products harvested in the U.S. Pacific Northwest was estimated at $300 million in 1992 (Krieger, 2001). The numbers are likely to be much higher today.

Harvest of NTFPs is unregulated, so landowners do not receive compensation, governments do not receive proper taxation revenue, and there are few disincentives to avoid over-harvesting resources. Trespass and competition mean that people are extremely secretive about their sources. Unfortunately, forests are extremely difficult to monitor, which would make regulations challenging and expensive to enforce.

Even in the case of legal bioprospecting, where pharmaceutical and other companies pay to collect genetic or biochemical materials from protected areas, there have been difficulties. Bioprospecting in Yellowstone National Park led to public backlash about lack of transparency and proper environmental assessment (Cooper & Vargas, 2004). The BC government's only experiences with bioprospecting have been a now repealed regulation for cascara bark and unused guidelines for the harvest of yew trees (FPB, 2004). Active management of NTFPs is fraught with unknowns; much investigation would be necessary to ensure sustainability of the resource.

With TLC Conservation Partners Program, consumers who buy food with their butterfly label are supporting producers who have made a commitment to conservation (Scott & Bhattacharyya, 2004). Community Products (founded by Ben and Jerry's Ice Cream) helped protect threatened South American rainforests by using nuts from those forests and returning 60% of its profits to environmental organizations (IUCN, 2000). In a similar fashion, honey producers with beehives on protected areas could donate a portion of their revenues to conservation and use the protected area in a cause-related marketing campaign.

In the MABR, a U-Cut Christmas Tree Farm pays fees to BC Hydro for the privilege of growing, tending and selling Christmas trees on a right-of-way in Whiskey Creek. Trees were sold for $26 to $32 during the 2005 Christmas season. Englishman River Regional Park, owned by TNT and managed by the RDN, includes a similar right-of-way much closer to the City of Parksville that could serve a similar purpose.

Non-timber products do not have to be harvested from protected areas. An important source of revenue for NALT is its Natural Abundance Plant Nursery. The organization salvages native plants from developments, to be used for habitat reclamation projects or to be potted and sold. Plants have also been donated by Malaspina University College Horticultural Department, B.C. Forests, and others. NALT conducts site visits to private properties on request, to advise owners on native plant gardening and landscaping suited to their property. Also on request, they present native plant gardening information sessions to horticultural and naturalist groups in the region. These presentations and site consultations have often resulted in plant sales, and occasionally to contracts to carry out native plant gardening projects. A demonstration native plant garden was designed and

planted in the front yard of the NALT Stewardship Centre. Information on native species and the merits of using native plants were collected and added to the Stewardship Centre's resources (G. Adrienne, personal communication, June 15, 2005). Nursery customers could buy other goods as well, such as shirts and photos, and take advantage of NALT's library and displays.

Prairie Restorations, a native plant landscaping business in Minnesota grossed $1.5 million in 2003, and employed fifteen full-time employees and twenty seasonal workers. Corporations found the native plant landscapes projected an environmentally sensitive image (Platts, n.d.). The company also runs a retail greenhouse and store. The owner developed do-it-yourself kits, offered computer programs and held educational seminars for private landowners who wanted to design and install their own native landscapes (Prairie Restorations, n.d.).

***Tax Breaks for Environmental Investment***

In the Netherlands, interest and dividends earned on money invested in officially sanctioned green funds are tax exempt. Between 1992 and 1997, the law mobilized almost $1.4 billion for environmental projects (WWF, 2003). As a financial incentive, tax breaks can be successful irrespective of a conservation ethic. This mechanism could be introduced to complement other initiatives.

***Voluntary Check-off on Tax Returns.***

More than half of U.S. State governments have generated funds for conservation through voluntary wildlife, non-game, endangered species or Natural Areas "check-offs" on income tax refunds (i.e. all or a portion of a refund would be transferred to a chosen category). Revenues ranged from $8000 in Louisiana to $1,260,000 in Maryland (fiscal year 2001), and declined in 5 states due to competing check-offs. In Indiana, 31,427 taxpayers opted to give all or part of their refund to the non-game program in 2000, contributing ~$400,000; however the check-off was the program's only source of funding (TNC, 2004). In Hungary, individuals could contribute 1% of their taxes to the charitable foundation of their choice by filling in the bank number of the foundation; the government then made the appropriate payment. There was so much competition for the contribution that the foundations campaigned to taxpayers (IUCN, 2000). With current charitable tax deductions, governments would probably see a check-off contributing to

NGOs as redundant. However, a voluntary check-off to contribute to a Trust for BC Parks, particularly to generate an endowment fund, might be well-received by politicians and the public.

***Wildlife Act*, section 117(d)**

Section 117(d) of the *Wildlife Act* calls for any revenues derived from Wildlife Management Areas (WMAs) and other lands administered by MOE for the benefit of fish or wildlife to be paid into the HCTF. This section of the Act should be modified to clearly apply to revenue earned by a third party. Enforcement would send a clear message to people wishing to exploit fish and wildlife lands for profit without compensation to the resource. A project participant revealed that DFO had authorized a shellfish depuration clam fishery in Parksville Bay and the profits went solely to the company. In another case First Nations gave permission for a houseboat to remain on a WMA; if allowed to stay the owner could be paying rent to contribute to conservation of the WMA. The resources which would be required to develop this revenue stream are minimal.

## Appendix B. A Brief Encounter with Economics

### *Environmental Valuation*

When cost-benefit analyses are conducted, environmental values are rarely part of the calculation. This contributes to a fundamental conflict between economic growth and conservation, with the consequence that governments reallocate intact natural resources to expanding human needs (Pergams, Czech, Haney & Nyberg, 2004). To resolve it, natural area services, including biodiversity conservation, must be appropriately valued, considering scarcity, substitution and costs of restoration. The complexity of credible valuation and the systemic changes necessary to employ it in decision-making suggests that this route to adequate funding for protected areas is unlikely to deliver any time soon. Researchers in Florida calculated the value of a tidal marsh to be at least $204,945 per ha, more than 100 times its market value excluding inestimable scientific or esthetic values (Meadows, n.d.), while Olewiler (2004) valued estuaries (~ tidal marshes) in the Lower Fraser Valley of BC at $22,800 per hectare per year. Further, all current methods of valuation are likely to grossly underestimate natural values, partly because understanding of ecological processes is very incomplete and social equity is ignored (Meadows, n.d.).

Yet environmental valuation, with all of its limitations, has several significant redeeming qualities. It can provoke consideration of conservation values where there was none and help demonstrate our relationship to the natural world for those who think mainly in dollars and cents. It can also eliminate the all-too-common practice of assigning a value of zero or infinity to our environment so that it doesn't even make it onto the agenda.

### *Public and Private Goods and Services*

When considering revenue generation, it is important to first understand the public and private nature of the "goods and services" protected areas provide. A public good has two key characteristics. It is non-excludable, i.e. once it is provided to one individual, it is provided to all. A public good is also non-rival; consumption of the good by one individual does not reduce the benefits to others (Productivity Commission, 2001). The benefits of most environmental services are non-excludable and non-rival. However, non-excludability leads to free-riding, where individuals refuse to pay or understate their willingness to pay because they know they can consume the good even if

they don't pay for it. Governments or non-profits typically provide public goods because no company could profit by selling it (Turner, 2002).

In contrast, private goods and services are both excludable and rival. For example, property near protected areas has a higher market value and tourism businesses sell goods and services to people who have come to see park attractions.

Parks are often open access resources, which provide benefits that are non-excludable but are often rival insofar as they, like other common resources, have limited ability to meet demands.

> The parks themselves are limited in extent….whereas population seems to grow without limit. The values that visitors seek in the parks are steadily eroded. Plainly, we must soon cease to treat the parks as commons or they will be of no value to anyone (Hardin, *The Tragedy of the Commons*, 1968).

Park visitor numbers and activities need to be managed to avoid loss of expected and valued visitor experiences consistent with accessing a natural environment, and to prevent outright damage to that environment. Rivalry and excludability of different management and funding approaches should be taken into account. For example, parks with pay entry (including those with parking meters) may be non-rival, but end up being exclusionary from an ability-to-pay perspective. And when administration and enforcement expenses as well as social costs are factored into the equation, the costs of excluding people from public resources may outweigh the benefits.

Because conservation contributes to the provision of private goods and services at the same time providing non-excludable societal benefits, one might conclude that conservation should be funded by private as well as public beneficiaries. Society pays dearly if environmental services are compromised. People will not pay for wildlife viewing if there is no wildlife to watch. Tourists will not visit an area that is more compromised than their own homes (M. Deakin, personal communication, June 28, 2005). When conservation is funded from a mix of public and private sources, there will be an incentive to conserve both the public and private features of protected areas (IUCN, 2000).

***Willingness to pay (WTP)***

There are many ways to estimate the value of an environmental good or service where there are no comparable formal markets; in many cases people are simply asked

what they would be willing to pay for it. WTP studies tell us that people value healthy ecosystems. For example, divers were willing to pay 13% more for dives featuring 12% more grouper, and 5.5% more for a trip with 30 lb grouper compared to a trip with 5 lb grouper (Lindberg, 2001). However, the willingness of individuals to pay user fees does not indicate the total value of the recreational benefits they obtain from their visit (Connor & Gilligan, 2003). What's more WTP studies may not be very accurate, as people tend to respond differently to hypothetical situations than they do real ones (Grewell, 2004). In addition, WTP doesn't assess a person's *ability* to pay.

Like many other economic measurements it often lacks a "big picture" perspective. As an example, tourists in China were willing to pay an additional sum for their entry visas for giant panda conservation, even without the opportunity to see them. Based on these WTP studies, pandas were estimated to be worth $100 million per year, but the value did not take into account the fact that panda conservation competes for resources with some of the poorest people in China (Pearce, 1999). People were not asked whether they would be willing to pay a premium for the costs of giving priority to pandas in their habitat to offset the dependency on and foregone use of resources by human populations.

More often now, WTP studies are replaced by formal markets demonstrating that nature and protected areas are valuable. Ecological services are valued by their restoration, substitution and mitigation costs. Ecotourists pay exorbitant amounts of money to observe pristine areas (van der Straaten as cited in Brown, 2001).

## Appendix C. Project Participants

- Blaine Sepos, Executive Director, Oceanside Tourism Association
- Carol Beaupre, Administrator, Osprey Park Operations Mid-Island and North Island Ltd.
- Carolyn Dodd, President, Mid-Island Wildlife Watch Society; member of Arrowsmith Naturalists and Nanoose Naturalists
- Dave Forman, Arrowsmith Area Supervisor, Protected Areas Section Parksville, Ministry of Environment
- Dave Smith, Director of Planning, Alberni-Clayoquot Regional District
- Dave Smith, Federal Lands Manager, Canadian Wildlife Service
- Deb Kennedy, Development and Communications, The Nature Trust of B.C.
- Dick Heath, Regional Manager, Vancouver Island Regional Office (Nanaimo), Ministry of Environment
- Gail Adrienne, Executive Director, Nanaimo Area Land Trust
- Gary Murdock, owner, Pacific Rainforest Adventure Tours
- Glen Jamieson, President, Mount Arrowsmith Biosphere Foundation
- Joan Michel, Parks and Trails Coordinator, Regional District of Nanaimo
- John Furney, Recreation Services Analyst, Protected Areas Recreation and Conservation Section, Ministry of Environment
- Karen Hudson, Executive Director, Salt Spring Island Conservancy
- Kebble Sheaff, member Arrowsmith Mountain Bike Club; owner Arrowsmith Mountain Cycle
- Les Bogdan, B.C. Coastal Manager, Ducks Unlimited Canada; Chair B.C. Trust for Public Lands
- Louanne Ralston, Business/Client Services Manager, Pacific Rim National Park Reserve
- Michele Deakin, Brant Festival volunteer; member, Mid Vancouver Island Habitat Enhancement Society; Coordinator, Parksville/Qualicum Beach Seachange Marine Conservation Society

- Neil Connelly, General Manager of Community Services, Regional District of Nanaimo
- Nichola Walkden, Assistant Executive Director, The Land Conservancy of B.C.
- Randy Longmuir, Mayor, City of Parkville
- Ron Cantelon, MLA Nanaimo-Parksville
- Stan Boychuk, Executive Director Clayoquot Biosphere Trust; Co-Chair, Canadian Biosphere Reserves Association
- Teunis Westbroek, Mayor, Town of Qualicum Beach
- Tim Clermont, Conservation Land Manager, Vancouver Island Wetlands Management Program
- Tory Stevens, Protected Areas Ecologist (Terrestrial), Protected Areas Recreation and Conservation Section, Ministry of Environment (was MWLAP)
- Trevor Wicks, Arrowsmith Watersheds Coalition Society

## Appendix D. Sample Interview Questions

To governments, land trusts, stewardship groups and others:

- How do initiatives that you are currently involved with affect management of parks and conservation areas in the region?
- What conservation management issues are challenging your organization or agency?
- How have funding considerations affected your ability to achieve your goals?
- How are you planning to generate additional funds for conservation management?
- Which of your revenue generation initiatives have been most successful?
- How do you measure success?
- How do these initiatives work?
- What have been your greatest challenges in their implementation?
- How has your organization or agency integrated conservation management or funding of conservation management with governments or other organizations at a community level?
- If you had more than adequate financial resources, what would be your top 3 priorities?
- What meaning does “community-based revenue generation mechanism” have for you?
- What would you like to see accomplished by this research?

To tourism and recreation user groups:

- Does it surprise you and/or concern you that many of the region’s protected areas are experiencing problems with ecological integrity? Why or why not?
- Do conservation management challenges affect your organization/business? If yes, how?
- Does your organization/business currently have a role in conservation management of local parks and conservation areas? If yes, what is that role? What would you like your role to be?
- How does your organization/business benefit from nearby parks and conservation areas?

- How does your organization/business currently contribute to management of parks and conservation areas?
- How might revenue-generation mechanisms for parks and conservation areas contribute to or detract from organization/business goals?
- What kinds of on-site or community-based revenue generation mechanisms would be compatible with your organization/business?

To biosphere organizations:

- What do you hope to achieve with respect to sustainability? In core and buffer areas?
- What barriers or challenges are you facing as you attempt to fulfill your goals and objectives?
- What is/should be your role in the funding and management of protected natural areas in the biosphere reserve?

## Appendix E. Visitor Use of Provincial Parks

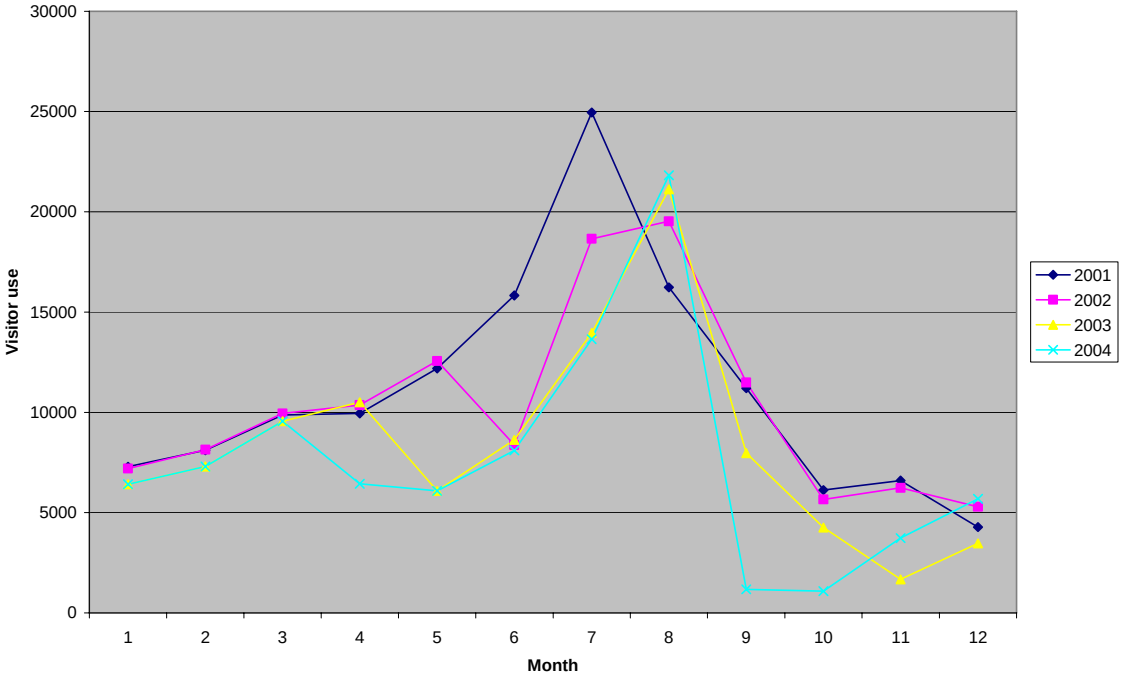


Figure 6. Visitor use of Rathtrevor Beach Provincial Park, 2001-2004.

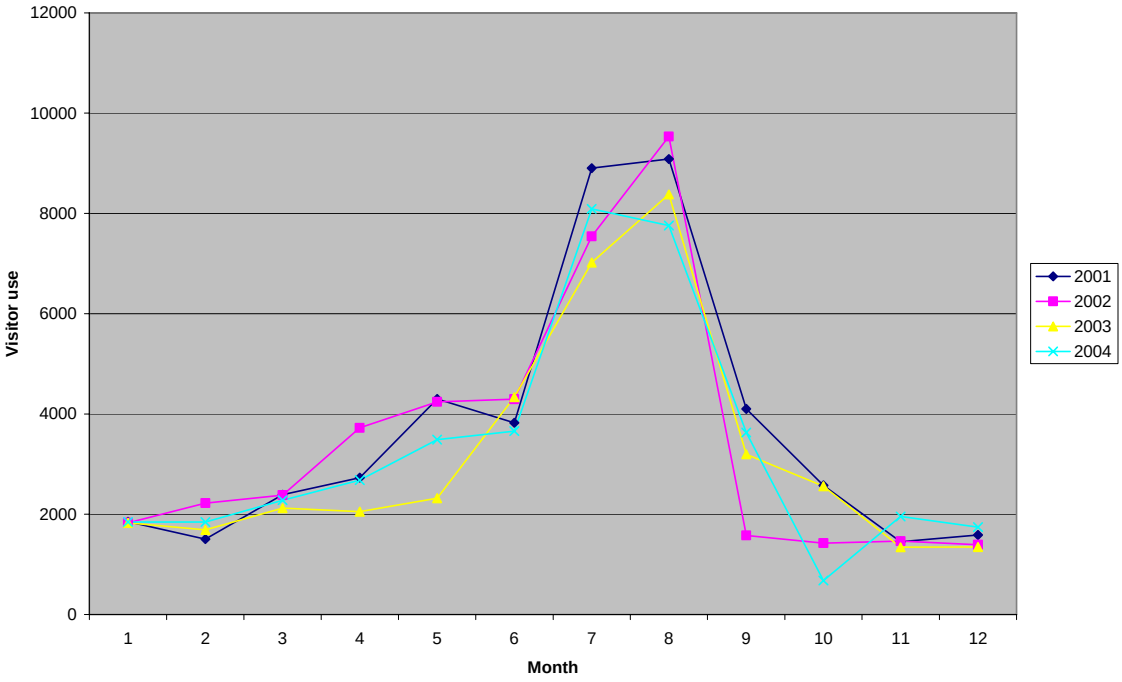


Figure 7. Visitor use of Englishman River Falls Provincial Park, 2001-2004.

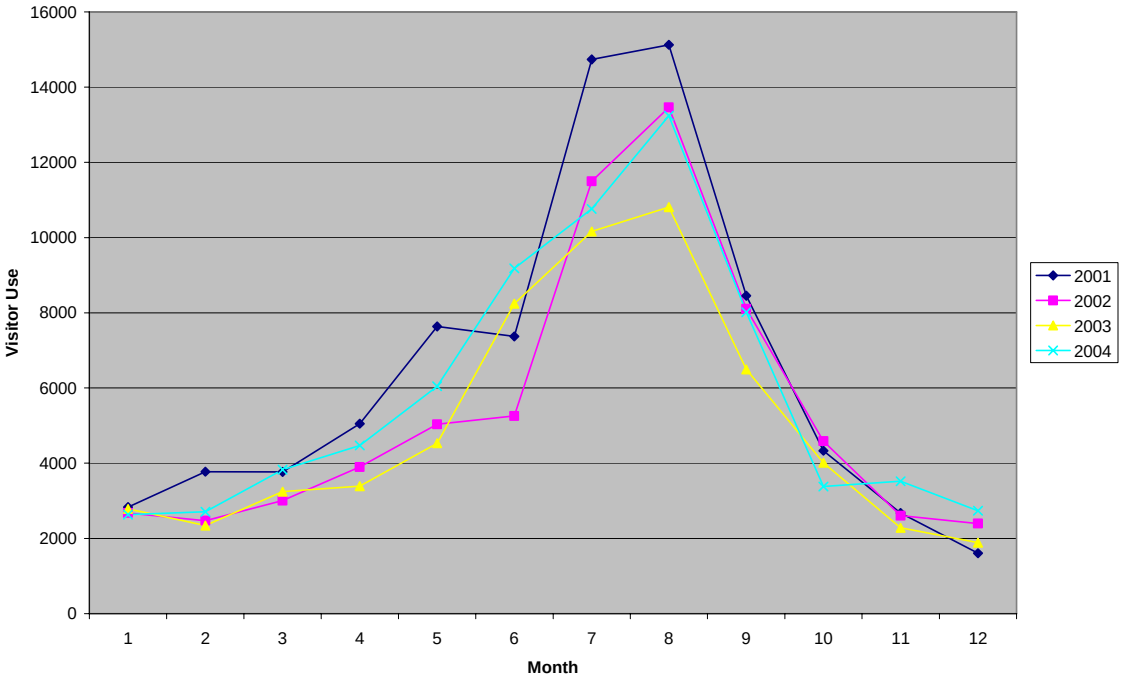


Figure 8. Visitor use of Little Qualicum Falls Provincial Park, 2001-2004.

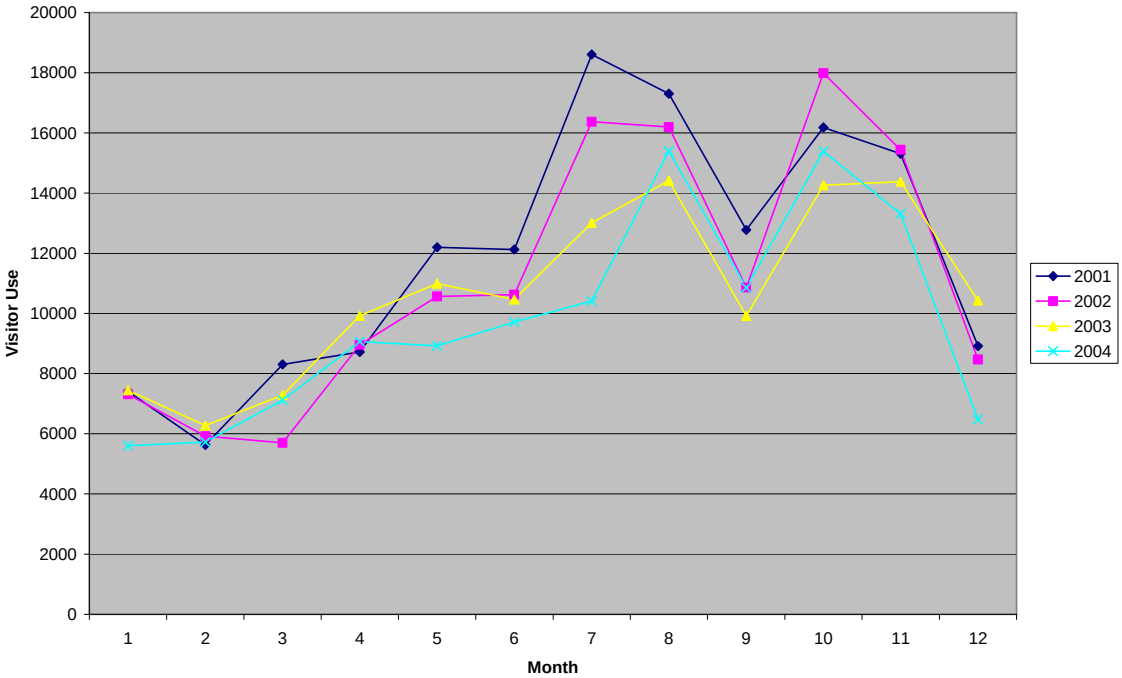


Figure 9. Visitor use of Goldstream Provincial Park, 2001-2004.

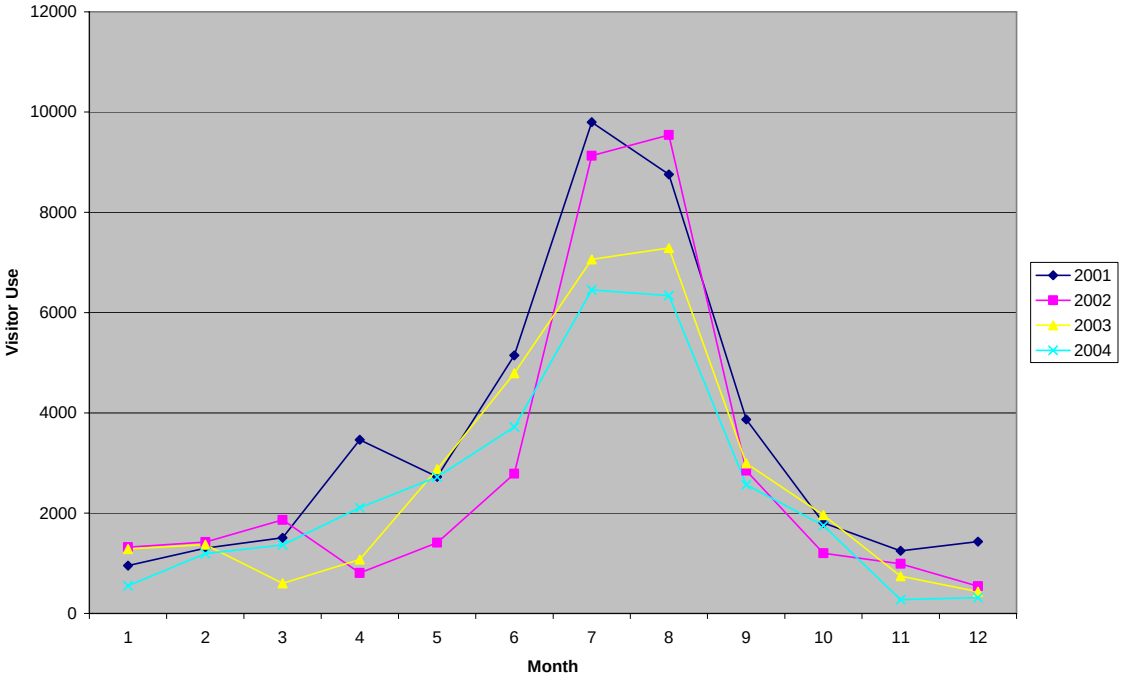


Figure 10. Visitor use of Miracle Beach Provincial Park, 2001-2004.

## Appendix F. List of Abbreviations and Acronyms

| | |
|---|---|
| ACRD | Alberni-Clayoquot Regional District |
| ATV | All Terrain Vehicle |
| BCCLF | BC Conservation Lands Forum |
| CBD | Convention on Biological Diversity |
| CBRA | Canadian Biosphere Reserves Association |
| CBT | Clayoquot Biosphere Trust |
| Ck | Creek |
| COTA | Council of Tourism Associations of British Columbia |
| CPAWS | Canadian Parks and Wilderness Society |
| CWS | Canadian Wildlife Service |
| DFO | Fisheries and Oceans Canada (Department of Fisheries and Oceans) |
| DUC | Ducks Unlimited Canada |
| ENGO | Environmental Non-Government Organization |
| ENR | Esquimalt and Nanaimo Railway\ |
| FTE | Full Time Equivalent |
| GRCA | Grand River Conservation Authority |
| HCTF | Habitat Conservation Trust Fund |
| I&O | Interpretation and Outreach |
| IRS | Internal Revenue Service (U.S.) |
| IUCN | World Conservation Union |
| MABF | Mount Arrowsmith Biosphere Foundation |
| MABR | Mount Arrowsmith Biosphere Reserve |
| MELP | Ministry of Environment, Lands and Parks (now MOE) |
| MLA | Minister of the Legislative Assembly |
| MKMA | Muskwa-Kechika Management Area |
| MOE | BC Ministry of Environment |
| MWLAP | BC Ministry of Water, Land and Air Protection (now MOE) |
| NALT | Nanaimo and Area Land Trust |
| NCC | Nature Conservancy of Canada |
| NEP | Niagara Escarpment Plan |
| NET | National Environmental Treasure |
| NGO | Non-Government Organization |
| NRTEE | National Round Table on the Environment and the Economy |
| NWA | National Wildlife Area |
| O&M | Operations & Management/Operations & Maintenance |
| OCP | Official Community Plan |
| OTA | Oceanside Tourism Association |
| PECP | Pacific Estuary Conservation Program |
| PFO | Park Facility Operator |
| PP | Provincial Park |
| PQBWMA | Parksville – Qualicum Beach Wildlife Management Area |
| RDN | Regional District of Nanaimo |
| RV | Recreational Vehicle |
| SARS | Severe Acute Respiratory Syndrome |

| | |
|---|---|
| TLC | The Land Conservancy of British Columbia |
| TNC | The Nature Conservancy (U.S.) |
| TNT | The Nature Trust of British Columbia |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization |
| VIWMP | Vancouver Island Wetlands Management Program |
| WCEL | West Coast Environmental Law Society |
| WMA | Wildlife Management Area |
| WTA | Wilderness Tourism Association |