

**Appendix II:**  
**Communications Strategy**  
**for the**  
**Endangered Banff Springs Snail**

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## **1.0 Introduction**

The Banff springs snail (*Physella johnsoni*) is a small, unique mollusc that lives in five thermal springs on Sulphur Mountain in Banff National Park (BNP) (Lepitzki, 1997; Lepitzki et al., 2002a). The snail is endemic - found nowhere else on earth (Remigio et al., 2001). It is the most at-risk wildlife species in the park (COSEWIC, 2000). Though the snail is protected under the National Parks Act, most people who visit its habitat are unaware of its existence and the fragility and uniqueness of thermal spring ecosystems.

The Banff springs snail is an ambassador for the uniqueness of thermal spring ecosystems in general and an indicator of the health of thermal spring ecosystems. Here in Canada's first and most famous national park, founded around these very thermal springs (Parks Canada, 1998), Parks Canada has an opportunity to demonstrate that all species are important – big or small, terrestrial or aquatic, mammal or invertebrate. It is a chance to show how park staff and the public can work together to understand, appreciate and protect a species at risk

An effective public education program is an essential component of the Banff springs snail Recovery Plan (Lepitzki et al., 2002a) and Protection Strategy (Lepitzki et al., 2002b). This strategy details communication priorities and recommended actions for the years 2002 to 2006. The recommended actions in this strategy are linked to Appendix I: Protection Strategy for the Banff springs snail (Lepitzki et al., 2002b).

## **2.0 Background**

### **2.1 Overview of Communications**

A preliminary Communications Strategy (Dalman, 1997) was prepared to inform park staff, local residents and visitors of the existence of the “threatened” (uplisted to “endangered” in 2000, COSEWIC, 2000) Banff springs snail. Most of these recommendations have been implemented. This strategy determines communication actions, funding, and implementation over the next five years.

Parks Canada has identified the Banff springs snail as a priority species in their Species At Risk Program (Parks Canada, 2001). A Species at Risk Public Education Fund has also been established and future applications for grants from this fund will be based on the priorities and recommendations in this strategy.

### **2.2 Endangered Banff Springs Snail**

The Banff springs snail (*Physella johnsoni*) is currently endemic to five thermal springs on Sulphur Mountain in BNP (Lepitzki, 1997; Lepitzki et al., 2002a). Historically, it inhabited three additional thermal springs and one cool spring near the town of Banff (Clench, 1926; Clarke, 1973, 1981). In April of 1997 the Banff springs snail was classified as “threatened” by COSEWIC (Committee on the Status of Endangered Wildlife in Canada) (COSEWIC, 2000) because of its drastic population fluctuations, its disappearance from almost half of its historic locations, and its location in high human-use areas. This snail was the first living mollusc and one of the first invertebrates to be listed by COSEWIC. In 2000, the Banff springs snail was re-assessed and uplisted to “endangered” when COSEWIC adopted modified World Conservation Union criteria (COSEWIC, 2000).

The Banff springs snail is the most at-risk wildlife species in BNP (COSEWIC, 2000). Other species at risk in the park include the woodland caribou (“threatened”) and grizzly bear and wolverine (both “special concern”).

The Banff springs snail is essential to the proper functioning of thermal spring ecosystems, and acts as an indicator of their health. Across North America, thermal spring ecosystems are under serious threat (Brues, 1928; Kroeger, 1988). Few still contain their natural assemblages of plants, animals, and bacteria.

The Banff springs snail is also a unique element of regional biodiversity (Mayhood, 1992). It is a valuable

biogeographic marker (Mayhood, 1992) that contributes to understanding the area's geological history and evolution.

Protection of the Banff springs snail reflects Parks Canada's responsibilities and commitments under the Canada National Parks Act (Government of Canada, 2000) and the National Accord for the Protection of Species at Risk (Government of Canada, 1998), and helps to fulfil our global responsibility to maintain biodiversity.

It is fitting for Canada's first national park, founded around these very thermal springs, to show leadership in protecting this species at risk.

One of the strategic goals of the BNP Management Plan (Parks Canada, 1997) is:

“To protect unique, rare, threatened and endangered plant and animal species, including those that are of scientific importance, and those that are locally, regionally, and nationally and internationally significant.”

### **2.3 Protection Efforts To Date**

Since the snail was listed by COSEWIC in 1997 (COSEWIC, 2000), Parks Canada has implemented several measures to protect the Banff springs snail. An integrated three-pronged approach is utilized, involving scientific research and monitoring, communications, and law enforcement (Lepitzki et al., 2002a,b). Protection and recovery measures include:

- protection from human disturbance through the closure of some sites to the public, stepped-up surveillance, law enforcement and fines of up to \$2,000.
- research into the snail's reproductive biology, ecological role, population dynamics and distribution.
- research to understand the flora, fauna, and dynamics of the thermal spring ecosystems.
- a captive-breeding program to restore extirpated populations.
- education and awareness initiatives to inform local residents, park staff and visitors about the snail.

### **3.0 Summary of Communication Activities To Date**

There has been a continued effort since 1996 to increase public awareness about the Banff springs snail. The co-operation and support from a variety of local, national, and international organizations has also been very helpful in raising the profile of this at-risk species.

#### **3.1 Preliminary Communications Strategy**

- Drafted in 1997 (Dalman, 1997), most recommendations have been implemented.

#### **3.2 Protection / Regulatory Signage**

- “Area Closed After Hours” signs and alarms installed at the Basin Spring.
- Area closure signs installed in the Middle Springs.
- Regulatory signs installed at the Upper (C&B) and Lower (C&B) Springs
- Restricted Activity Order implemented at Kidney, Middle, and Cave and Basin Springs.

#### **3.3 Exhibits / Displays**

- Interpretive panel installed at the Basin Spring, Cave and Basin National Historic Site (C&BNHS).

- Interpretive exhibit featuring the protection and recovery efforts for the Banff springs snail installed at the C&BNHS.

### **3.4 Print**

- Parks Canada Banff springs snail fact sheet.
- 2001 National Species at Risk poster campaign (see <http://www.speciesatrisk.gc.ca>).
- An artwork/cartoon package prepared for various interpretive purposes.
- Re-introduction information package.

### **3.5 News Media**

- Coverage by local, regional and national newspapers, radio, and television.
- The snail feature on Park's FM radio station.

### **3.6 Staff Awareness**

- Species At Risk newsletter for Parks Canada staff.
- Orientation sessions for BNP staff (Cave and Basin maintenance and interpretation staff).
- Orientation program for local business staff.
- Mountain Parks Heritage Interpretive Association (MPHIA) training for interpretive guides.

### **3.7 Communicating Scientific Research and Monitoring**

- Research results published in scientific journals and popular media, scientific and public presentations, and College and University lectures.

### **3.8 Efforts Targeted Towards Banff's Transient Staff**

- Communication efforts targeted towards Banff's transient staff at fairs such as "One Hot Summer" and in publications such as the "Local Lowdown" and the "Wildlife" newspaper.
- Messages include the endangered status of the snail and potential consequences of illegal swimming and entry into closed areas.

### **3.9 Interpretive Programs**

- Information incorporated into interpretive programs and tours at the C&BNHS.

### **3.10 Raising Profile in Local Banff Community**

- The focus of several community efforts such as a prize-winning Canada Day parade float and local Precipice Theatre productions.

### **3.11 Internet / WebSites**

- The BNP website features the snail poster and a snail fact sheet ([http://www.\\_\\_\\_\\_\\_](http://www._____)).
- Featured on Environment Canada's on-line magazine, Envirozine ([http://www.\\_\\_\\_\\_\\_](http://www._____)).
- Stories in Research Links ([http://www.\\_\\_\\_\\_\\_](http://www._____)) and Recovery Newsletter ([http://www.\\_\\_\\_\\_\\_](http://www._____)).

### **3.12 Other Initiatives**

- The Banff springs snail was included in the Parks Canada Millennium time capsule, to be opened in 2035.

#### **4.0 Current Issues**

##### **4.1 Cave and Basin National Historic Site**

Four of the five existing snail populations inhabit highly regulated and historically significant built environments within the C&BNHS (Lepitzki et al., 2002a). This national historic site commemorates the birth of Canada's national park system (Parks Canada, 1998).

Historically, thermal spring waters have been directed to flow through a complex system of pipes, drains, and artificially maintained pools. Snail abundance and distribution are now dependent on the capricious nature of natural thermal water flows and this engineered system.

Managing the habitat of an endangered species while at the same time maintaining the commemorative integrity of a National Historic Site poses significant challenges. For example, communication of species at risk messages must be balanced with the need for communicating the commemorative intent of the site.

##### **4.2 Re-Introduction of the Banff Springs Snail**

Parks Canada plans to re-introduce the Banff springs snail to two of its historic habitats in 2002: the Upper Middle Spring and Kidney Spring. The Upper Middle Spring lies within a wildlife corridor which is closed to public access. The Kidney Spring has been closed and fenced in preparation for this re-introduction. At both locations, signs and surveillance devices have been installed. An Environmental Screening (Lepitzki and Pacas, 2001) has been approved. A communications package for the re-introduction project has also been drafted.

##### **4.3 Ongoing Protection Issues**

In spite of protection and public awareness measures that have been implemented over the last few years at the C&BNHS human disturbance of the snails and their habitat continues to be a concern in this high visitor-use area (Lepitzki et al., 2002b). A Restricted Activity Order and improved onsite signage were recently incorporated to provide enhanced protection and enforcement capabilities. Eliminating human disturbances to the snails' habitat is essential to the survival of the species.

#### **5.0 Communication Objectives**

Targeted effective communications will be designed to achieve the following objectives:

##### **5.1 Protect the Banff Springs Snail and its Habitat**

Communication is essential in preventing unintentional or careless disturbance of the snail and its habitat. Communications will be targeted at those most likely to create a direct impact on these resources. Messages will include the existence of surveillance, consequences of illegal entry, facility modifications required to protect and recover the snail, and results of research. All the other communications objectives also lead to this ultimate objective.

##### **5.2 Raise Public Awareness of the Banff Springs Snail**

General park visitors will be exposed to messages in a variety of park media by park personnel and through tourism industry partners. Visitors to the C&BNHS and the Upper Hot Spring (UHS) Pool will receive additional on-site information and interpretation.

### **5.3 Link Ecological and Commemorative Integrity Messages at the C&BNHS**

Parks Canada must protect both the cultural and the natural resources at the Cave & Basin National Historic Site (Canadian Heritage, 1994; Parks Canada, 1998; Government of Canada, 2000). Messages will strive to enrich visitors' experience, understanding, appreciation and support for both ecological and commemorative integrity.

### **5.4 Foster a Sense of Stewardship and Responsibility for this Endangered Species**

Fostering stewardship and responsibility will be achieved by informing Parks Canada staff, local residents and visitors, and by involving them in the implementation of protection measures.

### **5.5 Gain Public Support and Understanding of the Re-introduction of the Snail to Several of its Historic Locations**

The support and compliance of local residents is needed to protect the integrity of these re-introduction sites. Communication efforts will be directed at this group and key multipliers (media, information staff, staff trainers).

### **5.6 Educate the Public about the Uniqueness and Fragility of Thermal Spring Ecosystems**

Brues (1928) described concerns regarding the fragility of thermal spring ecosystems. Banff's thermal springs are host to a number of animals and plants which are unique (Table 1: Lepitzki et al., 2002a). Continued research to understand the flora, fauna, and natural processes will further contribute to understanding and elucidating the dynamics of thermal spring ecosystems.

### **5.7 Inform the Public That Other Habitats and Species are At Risk Nationally and Globally**

There are habitats and species at risk wherever people live. Parks Canada, Environment Canada and the Department of Fisheries and Oceans are taking the leading role to deliver the National Strategy for the Protection of Species at Risk (Government of Canada, 1998).

## **6.0 Target Audiences**

### **6.1 External**

#### **6.1.1 New Local Staff / Transient Youth**

This has been the main group responsible for illegal entry and inadvertent disturbance. It is important to let this group know the consequences of such actions. Due to high staff turnover, this communication must be continual.

#### **6.1.2 Park Visitors**

The Banff springs snail and its endangered status needs to be interpreted to Park visitors with a special focus at the C&BNHS and the UHS. Visitors must be informed about appropriate or inappropriate behaviour (i.e., actions that disturb or disrupt snails and their habitat) when experiencing sensitive ecological and commemorative sites.

#### **6.1.3 Banff Residents / Environmental Groups / Local School Children**

Local residents are generally aware of the Banff springs snail, and should be considered resource stewards. Groups such as Bow Valley Naturalists have shown considerable interest in the research presented to date, and could be potential partners in communications initiatives for the local community. Reporters from local print media such as the *Crag and Canyon* and *Rocky Mountain Outlook* have provided news coverage on issues surrounding the Banff

springs snail. However they must be exposed to a balanced view including the need to protect both ecological and commemorative integrity at the C&BNHS.

On-site tours and orientation will continue to be beneficial for this group. Law enforcement officers involved in patrolling the closed areas and the Crown Prosecutor require site orientation and updates on the protection of the snail.

#### **6.1.4 Scientific Community**

The scientific community needs to be continually updated on the latest research findings about the Banff springs snail and plans for its recovery.

#### **6.1.5 Canadian Students**

Information and educational products on the Banff springs snail's uniqueness, vulnerability and recovery should be developed and made available to Canadian youth studying species at risk. Involvement of local students in the snail's recovery would be invaluable and a good example to others.

#### **6.1.6 Broader Canadian Audience**

The protection of the Banff springs snail presents a unique challenge with implications for all Canadians. An invertebrate, although living completely within a National Park, still faces threats to its survival. Furthermore, the conservation of invertebrates differs from that of more well known vertebrates - being within a protected area is but the first step to ensure recovery (Wells, 1995; Kirby 1992 in Wells and Chatfield, 1995). Another endemic of the Cave and Basin marsh, the Banff long-nose dace (*Rhinichthys cataractae smithi*), has already been declared extinct (COSEWIC, 2000).

#### **6.1.7 Park Tour Operators / Guides and Hotels**

Guides, particularly those who visit the C&BNHS and/or UHS and hotel tourism officials should be briefed on the snail and ways they can encourage their staff and clients to help protect this species.

### **6.2 Internal**

#### **6.2.1 Senior Management**

The park Superintendent, Executive committee, the Chief Operating Officer of the Canadian Rockies Hot Springs, and the National SAR Program need updates on implementation of the Recovery Plan for the Banff springs snail and the long-term effectiveness of recommended actions in protecting this species.

#### **6.2.2 Banff National Park staff**

Staff dealing directly with protection issues need special on-site orientation and training. This group includes Cave and Basin staff, senior Heritage Programs staff, technical and trades staff involved in C&B maintenance, senior Canadian Rockies Hot Springs staff, Enforcement staff responsible for surveillance and monitoring, park and site interpreters, and trainers who deliver orientation programs for local business staff.

All BNP staff need general awareness-level information about the Banff springs snail and actions to ensure its protection and recovery.

### **6.2.3 Parks Canada Staff**

All Parks Canada staff should have access to information on the Banff springs snail as part of the overall Species at Risk program for Parks Canada.

## **7.0 Key Messages**

### **7.1 The Banff Springs Snail Is Special**

- The Banff springs snail (*Physella johnsoni*) is an inconspicuous little mollusc that lives in the thermal springs on Sulphur Mountain and is found nowhere else in the world.
- Historically, the Banff springs snail (*Physella johnsoni*) inhabited 9 springs, but today is only found in 5 (Middle Springs and Cave and Basin areas).
- The Sulphur Mountain thermal springs in BNP and the Liard hot springs in British Columbia are the only two locations where thermal spring snails are known to occur in Canada. The hotwater snail of Liard Springs, *Physella wrighti*, is listed as “endangered” by COSEWIC.
- The Banff springs snail is essential to the proper functioning of the thermal spring ecosystems and is an indicator of the springs’ health.
- The Banff springs snail is a unique element of regional biodiversity. It is also a valuable biogeographic marker which contributes to understanding the area’s geological history and evolution.

### **7.2 The Banff Springs Snail Is Endangered**

- The Banff springs snail is the most “at-risk” wildlife species in BNP.
- The Banff springs snail is listed as “endangered” by COSEWIC due to i) its disappearance from almost half of its historic locations, ii) drastic seasonal population fluctuations, and iii) its presence in a high human use area with illegal and inappropriate human use.
- The Banff springs snail was the first living mollusc to be listed by COSEWIC and among the first invertebrates.
- Other COSEWIC listed species in the park include the woodland caribou (“threatened”) and the wolverine and grizzly bear (both “special concern”).
- Worldwide species are going extinct at an alarming rate. Several species of thermal springs snails are known to have been lost in the last 100 years. Maintenance of biodiversity is critical for ecosystem health.

### **7.3 Parks Canada Is Committed to the Protection and Recovery of this Species**

- Parks Canada had the mandated responsibility to protect biodiversity and the ecological integrity (species complement and processes) of these springs.
- Protection of this snail reflects Parks Canada’s responsibilities and commitments under the Canada National Parks Act and the National Accord for the Protection of Species at Risk.
- Parks Canada is the sole jurisdictional authority for the protection of the Banff spring snail.

- North American thermal spring ecosystems are under serious threat and few thermal springs still contain their natural assemblages of plants, animals, and bacteria.
- Although this small invertebrate lives completely within a national park, it still faces threats to its survival. If it can not be protected within a National Park, where can it be protected?
- Continued research and monitoring enhances knowledge of the ecology of the snail and its thermal spring habitat.
- Parks Canada has increased protection for the snail and its habitat through surveillance, enforcement, and education.
- Parks Canada has prepared a Recovery Plan aimed at the protection and recovery of this endangered species. The eventual goal is to downlist the Banff springs snail from “endangered”.

#### **7.4 Ecological and Commemorative Integrity are Linked at the C&BNHS**

- The C&BNHS is nationally significant because it is the birthplace of Canada’s National Park system. Canada’s first National Park was founded around the thermal springs on Sulphur Mountain.
- Parks Canada has a mandate to protect both commemorative and natural resources at the C&BNHS.

#### **7.5 The Public Can Assist in Ensuring the Survival of the Snail**

- The public’s assistance is required to protect this endangered species and its habitat.
- The public can help by learning more about the snail and informing Parks Canada about vandalism or unintentional disturbance at the Sulphur Mountain thermal springs by calling the Banff Warden Service (762-1470) or Wildlife Watch (1-888-WARDENS).

#### **8.0 Site Specific Action Plans (2002 -2006)**

A number of communication activities and products are required to support the protection and recovery program for the Banff springs snail for the next five years.

The recommended actions are described for each site where the snail currently exists and potential re-introduction sites.

#### **8.1 Cave and Basin National Historic Site**

##### **8.1.1 Considerations**

- Large number of visitors, tour groups, and school tours.
- Both ecological and commemorative integrity must be respected.
- Messages must be complementary and not overwhelming.
- Limb-dipping may pose a threat. Visitors’ desire to feel the water must be managed by providing an opportunity to experience thermal water without affecting the snail.
- Potential for snail habitat enhancement identified in the Recovery Plan.

##### **8.1.2 Audiences**

- Visitors - broad spectrum.
- Staff - front-line and maintenance.
- Tour operators - local and drive-through.
- School Groups - local and regional.
- Hotels - staff and guests.

### **8.1.3 Recommended Actions**

- Incorporate pictographic signage (“How Hot is It?”) encouraging visitors to use the proposed limb-dipping trough.
- Include messages about this unique endangered species and how visitors can help to protect it in the revised C&BNHS brochure.
- Develop written materials for tour operator newsletters and other pre-trip media such as “*The Mountain Guide*”.
- Incorporate snail protection messages into tour operator information packages and training in particular for groups that will be visiting the C&BNHS.
- Create and install an interpretive panel featuring the unique thermal spring ecosystem, along with protection messages, for the Upper (C&B) Spring.
- Develop snail edukit for school groups visiting the C&BNHS. This edukit will also be available for other groups and venues.
- Develop “Parks in a Microcosm” field trips for park staff and managers, examining snails and their habitat, thermal spring ecosystems, and protecting both ecological and commemorative integrity at the C&BNHS.
- Communicate additional links between the UHS and C&BNHS: for a soak, go to the Upper Hot Spring; for an up-close look at the snail in its natural and commemorative habitat, go to the C&BNHS.

## **8.2 Upper Middle Spring**

### **8.2.1 Considerations**

- A site for snail re-introduction in 2002.
- Located within a Wildlife Corridor, closed to the public.

### **8.2.2 Target Audiences**

- Parks Canada and BNP staff.
- Bow Valley residents.
- Local, national, and international media.
- Organizations interested or involved in recovery of species at risk.
- Potential trespassers into the closed area, interested in soaking in the thermal springs.

### **8.2.3 Recommended Actions**

- Encourage comprehensive media coverage of the re-introduction.
- Finalize and distribute re-introduction information package including written material and artwork directed at local hotel and general park staff, a media package, and website material.
- Key messages include the protection measures in place, the consequences of trespassing, impacts of humans, and direction to the UHS for soaking.

## **8.3 Kidney Spring**

### **8.3.1 Considerations**

- Site for snail re-introduction in 2002.
- The spring has been closed and fenced, signage and surveillance devices have been installed.

### **8.3.2 Target Audiences**

- Rimrock / Banff hotel staff.
- UHS staff and visitors.
- Parks Canada and BNP Staff.
- Bow Valley residents.
- Local, national, and international media.
- Organizations interested or involved in recovery of species at risk.
- Potential trespassers into the closed area, interested in soaking in the thermal springs.

### **8.3.3 Recommended Actions**

- Encourage comprehensive media coverage of the re-introduction.
- Finalize and distribute the re-introduction information package.
- Continue to examine the feasibility of field trips for Rimrock Hotel staff to the re-introduction site and other (non-closed) habitat locations.
- Continue to examine the feasibility of involving local students / classes in monitoring the success of the re-introduction and relaying results to Canadian youth via the website.
- Provide regular updates on the success of the re-introduction of Banff springs snail on the SAR website
- Consider installing a webcam to be linked to the UHS.
- Key messages include the protection measures in place, the consequences of trespassing, impacts of humans, and direction to the UHS for soaking.

## **8.4 Upper Hot Spring**

### **8.4.1 Considerations**

- Receives a large number of park visitors.
- Feasibility as a snail re-introduction site is being examined.
- The UHS Interpretive Plan (Canadian Rockies Hot Springs, 2000) provides for potential interpretation of the Banff springs snail.

### **8.4.2 Target Audiences**

- BNP staff / UHS staff.
- Visitors to the UHS.
- Park visitors

### **8.4.3 Recommended Actions**

- Link interpretive messages to C&BNHS where visitors can see the snail.
- Develop interpretive media about the snail and thermal springs ecosystems at the UHS as indicated in the UHS Interpretive Plan.
- Key messages include variability in thermal water flows, snail re-introductions, opportunities to view snails at the C&BNHS, other species at risk in the Park, and Canada's Species at Risk program.

## **9.0 Overall Action Plan (2002 -2006)**

### **9.1 Park Staff**

- Provide regular updates to BNP staff on protection and recovery initiatives (i.e. re-introductions, results from latest research and monitoring) via the Intranet and SAR Intranet websites.
- Develop field trips (C&BNHS and possibly Kidney Spring) focussing on the ecology of the Banff springs snail and its habitat with priority to park interpreters, information attendants, UHS staff, and park managers.
- Include information on the snail and Species at Risk in the Ecological Integrity staff training program as a Case Study and/or field trip.

### **9.2 Tour Operators / Private Interpretive Guides**

- Distribute existing print material (posters, fact sheets) and offer field trips through MPHIA training.
- Develop pre-trip messages about the uniqueness, value, and need for protection of the Banff springs snail for tour operator newsletters.

### **9.3 The Mountain Guide**

- Include a sidebar on Banff springs snail in "*The Mountain Guide*". This may require alternative funding sources or corporate sponsorship.

### **9.4 The International Year of Fresh Water - 2003**

- Profile the Banff springs snail as an ambassador for aquatic ecosystems during this year through features in Park publications, the Internet, and in interpretive programs.

### **9.5 Banff Springs Snail Poster**

- Develop distribution plan for the national poster.

### **9.6 Re-Introduction Information Package**

- Finalize and distribute the re-introduction information package consisting of information pieces targeted at park staff, local hotel staff, website, and the media.
- The snail re-introduction in 2002 may be a high-profile event if tied to Species At Risk legislation approval. Information packages and a tour for interested media and stakeholders may be considered to highlight the re-introductions.

### **9.7 Environmental Education "Snail Connections" Project**

- Hire an environmental education consultant to involve local school children in the protection and monitoring of this endangered species.
- Determine how best to communicate their work to other schoolchildren studying species at risk across Canada.

## **9.8 Snail Edukit**

- Develop an Banff springs snail edukit for teachers and students, comprised of photos, props, classroom activities and other hands-on materials.
- Available for use at the C&BNHS and at other sites and venues.

## **9.9 Website**

- Include the snail fact sheet and poster on the BNP website.
- Ensure links are established with Environment Canada's Species at Risk website and the National SAR Intranet and Internet websites.
- Examine methods to incorporate the latest results of research and monitoring onto the Intranet and Internet sites.

## **9.10 Local Staff, Transient Staff**

- Continue to target snail protection messages to local and transient staff at events such as the "Local Lowdown", "One Hot Summer", through General Delivery at the Post Office or other popular locals such as the YWCA.
- Seek sponsors appealing to this age group.

## **9.11 Snail Image CD**

- Obtain some good images of the Banff springs snail, its habitat, and the Recovery Program.
- Images should be made available on the park Intranet and Internet sites and on a CD for easy access and distribution.

## **9.12 Media Protocols**

- Develop media protocols and spokespeople for snail-related issues (i.e. Recovery Plan approval, snail re-introduction, general inquiries).

## **10.0 Implementation / Funding Schedule**

An Implementation / Funding Table (Table II-1) details actions and funding requirements required to support the protection and recovery program for the Banff springs snail for the next five years.

Table II-1. Schedule for implementation and funding of communication actions.

Audience	Objective	Key Messages	Future Actions	2001/02	2002/03	2003/04	2004/05	2005/06		
- New local staff - Transient youth	- Prevent disturbance of snails and habitat	- Snails exist - Don't disturb - Areas closed to protect snail - Consequences of illegal entry	- Reintroduction package information - Poster / handout - Continue with staff fairs and displays - Information distribution at local events, YWCA, beer coasters, posters, support of local businesses, etc. - Incorporate into training, e.g., Banff's Best - Rimrock staff tours, orientation, field trip	- Information package distributed to local hotels, YWCA etc. - Continue to support and profile closed areas - Review guidebooks						
- Park Visitors - C&BNHS - UHS	- Awareness - Education - Prevent disturbance	- Endangered Species exists here - Please don't disturb thermal spring ecosystems	- Mountain Guide - Fact Sheet incorporated into the Website - Link snail messages between UHS, Kidney Spring and C&BNHS - Incorporate into UHS Interpretive Plan	- Edukit	- Educator, contractor - "side bar" - Mountain Guide Input - C&BNHS brochure - Signage limb dipping trough	- C&BNHS, UHS Interpretive Panel - Year of Water - Mountain Guide - translation	- Media Evaluation - Interpretive Media - UHS - Marketing	- Interpretive Media - UHS - Marketing		
- BNP Staff - C&BNHS Staff - Maintenance - UHS - Managers - Info Centre Staff - Park Interpreters	- Understanding of value and need for protection - Responsibility for protecting this species	- Protection - Impact of maintenance activities - Updates on recovery efforts and reintroduction	- Staff updates on reintroduction, recovery on Internet - Ongoing staff training, field trips, site tours to C&BNHS & Kidney Spring - Finalize reintroduction package and distribute - Facilitated Cave and Basin Meeting / Workshop - Finalize maintenance/cleaning protocols	- Field Trips	- Staff tours, field trips (contractor, educator, GT-2) - Reintroduction package distributed on the Internet - Staff Workshop at C&BNHS	- Continue updates on monitoring and recovery efforts				
- Parks Canada Staff				- Field Trips		- Updates on monitoring and recovery efforts made available on local intranet and Website				
- Banff community - Enviro. Groups - Schools	- Local stewardship and protection - Support for reintroduction efforts	- They can help to protect this species and help make others aware of the snail's existence - Feedback re: success of reintroduction and monitoring	- Involve local community and environmental groups in reintroduction efforts, ceremony - Distribute re-introduction package - Distribution plan for national poster - Involve local school children in reintroduction efforts at Kidney Spring - Edukit - Web-site	- School scoping contract - Edukit	- Re-introduction package distributed - Involve locals in reintroduction efforts at Kidney Spring - Poster Distribution - MPHIA update - Tours and field trips (educator)	- Re-introduction package distributed - Involve locals in monitoring efforts at Kidney Spring				
- BNP Tour Operators & Guides			- update snail content in MPHIA training for tour guides - Banff's Best - Tour Operator Newsletter sidebar re: snail - Park Facts		- side bar - development of protection messages - Poster distribution - MPHIA update/tour	- Development of protection efforts message - "International Year of Fresh Water" feature - Heritage Tourism profile on snails and thermal spring ecosystems				
- Scientific Community & Special Interest Groups			- Recovery Plan feedback							
- Canadian Students	- Education and awareness of the Banff springs snail and thermal springs - Species at Risk	- Species at Risk - snail as an ambassador for thermal spring ecosystems - biodiversity - local Banff kids' involvement as an example of stewardship	- National poster distribution - Edukit and Website projects - Local kids relaying recovery results and monitoring actions to other kids across the country via Weblinks	- Environmental education connections	- Digital content initiative (PHQ) - Poster distribution (HQ) - Ongoing Species at Risk initiatives (HQ) - Website - Updates on Recovery and Monitoring					

Table II-1 continued.								
Audience	Objective	Key Messages	Future Actions	2001/02	2002/03	2003/04	2004/05	2005/06
- Canadians	- Education and awareness of: - Banff springs snail - thermal spring ecosystems - Species at Risk	- Species at Risk - Vulnerability of thermal springs	- Recovery Plan feedback - Seek out documentary TV/video opportunities re: Species at Risk, microfauna, snail recovery, e.g., Discovery Channel - Magazines, feature writers compile materials - Create Photo CD - National Profile/SAR Event - Website links/content		- Digital Content - International Year of Fresh Water - 2003 Profile Thermal spring ecosystems - Ongoing Species at Risk Initiatives - Website . add Recovery Plan and Monitoring Results - Media coverage on re-introduction efforts - Re-introduction, national links to SAR legislation/approval			
Total Funds Required (000's)				8.0	8.0	12.0	8.0	5.0

## 11.0 Literature Cited

- Brues, C.T. 1928. Studies on the fauna of hot springs in the western United States and the biology of thermophilous animals. *Proceedings of the American Academy of Arts and Sciences* 63: 139-228.
- Canadian Heritage, 1994. Guiding principles and operational policies. Minister of Supply and Services Canada. 125 pp.
- Canadian Rockies Hot Springs, 2000. Interpretive Plan (draft). 26 September.
- Clarke, A.H. 1973. The freshwater molluscs of the Canadian Interior Basin. *Malacologia* 13: 1-509.
- Clarke, A.H. 1981. The freshwater molluscs of Canada. National Museum of Natural Sciences, National Museums of Canada, Ottawa. 446 pp.
- Clench, W.J. 1926. Three new species of *Physa*. *Occasional Papers of the Museum of Zoology, University of Michigan*, 168: 1-8.
- COSEWIC, 2000. Canadian species at risk, April 2000. Committee on the Status of Endangered Wildlife in Canada. 23 pp.
- Dalman, M. 1997. Threatened Banff springs snail communications strategy. Draft prepared for Banff National Park. 5 pp.
- Environment Canada, 1988. Banff National Park Management Plan. Canadian Parks Service, Western Region. November 1988. 239pp.
- Government of Canada, 1998. National Accord for the Protection of Species at Risk.
- Government of Canada, 2000. National Parks Act.
- Kirby, P. 1992. Habitat management for invertebrates: a practical handbook. Sandy, U.K. 150 pp. *in* Wells and Chatfield, 1995.
- Kroeger, P. 1988. Meager Creek hot springs study. Unpublished report. 36 pp.
- Lepitzki, D.A.W. 1997. Status report on the Banff Springs Snail *Physella johnsoni* (Clench, 1926) in Canada. A final report prepared for the COSEWIC Secretariate. 12 January. 36 pp.
- Lepitzki, D.A.W., and Pacas, C. 2001. Re-establishment of the endangered Banff springs snail (*Physella johnsoni*) following habitat protection. An environmental screening prepared for Parks Canada, Banff National Park. 5 June. 33 pp.
- Lepitzki, D.A.W., Pacas, C., and Dalman, M. 2002a. Resource management plan for the recovery of the Banff springs snail (*Physella johnsoni*) in Banff National Park, Alberta. Prepared for Banff National Park. 18 February. 48 pp.
- Lepitzki, D.A.W., Low, B., and Pacas, C. 2002b. Appendix I: Protection strategy for the Banff springs snail, *Physella johnsoni*, in Banff National Park, 18 February. 13 pp. *In* Resource management plan for the recovery of the Banff springs snail (*Physella johnsoni*) in Banff National Park, Alberta. Prepared for Banff National Park, Alberta.

- Mayhood, D.W. 1992. A preliminary assessment of the native fish stocks of Jasper National Park. Part 3 of a Fish Management Plan for Jasper National Park. FWR Freshwater Research Limited, Calgary, Alberta. A report prepared for Canadian Parks Service, Jasper National Park, Jasper Alberta. 296 pp.
- Parks Canada, 1997. Banff National Park management plan. Minister of Public Works and Government Services Canada. 85 pp.
- Parks Canada, 1998. Cave & Basin National Historic Site, Banff National Park, Commemorative Integrity Statement. December. 20 pp.
- Parks Canada, 2001. Memo from Mike Wong to Field Superintendents, SC directors, and senior management board - Process for Parks Canada staff to access Species At Risk funds, 2002-03. 7 pp.
- Remigio, E.A., Lepitzki, D.A.W., Lee, J.S. , and Hebert, P.D.N. 2001. Molecular systematic relationships and evidence for a recent origin of the thermal spring endemic snails, *Physella johnsoni* and *Physella wrighti* (Pulmonata: Physidae). Canadian Journal of Zoology 79: 1941-1950.
- Wells, S.M. 1995. Molluscs and the conservation of biodiversity, pp. 21-36 in Biodiversity and conservation of the Mollusca, A.C. van Bruggen, S.M. Wells, and Th. C.M. Kemperman, editors. Proceedings of the Alan Solem Memorial Symposium on the biodiversity and conservation of the Mollusca at the 11<sup>th</sup> International Malacological Congress, Siena, Italy. Backhuys Publishers, the Netherlands.
- Wells, S.M., and J.E. Chatfield. 1995. Conservation priorities for European non-marine molluscs, pp. 133-152 in Biodiversity and conservation of the Mollusca, A.C. van Bruggen, S.M. Wells, and Th. C.M. Kemperman, editors. Proceedings of the Alan Solem Memorial Symposium on the biodiversity and conservation of the Mollusca at the 11<sup>th</sup> International Malacological Congress, Siena, Italy. Backhuys Publishers, the Netherlands.