
Silver Springs Stewardship Solutions REPORT

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1. Introduction and Context for the Community Initiatives Research

1.1 Executive Summary

Silver Springs Lakes is a natural jewel and a recreational magnet - a place near Elko that all visitors love but are not leaving in its pristine condition. To keep Silver Springs beautiful, worth recreating at in the future and protect the area for wildlife requires community input and stewardship.

A chain of three clear, blue-green, spring fed alpine lakes at the base of spectacular lichen covered vertical cliffs, with easy access, is popular to people throughout the year. Winter ice-skating before the snow falls is a magical 'flight like' experience. Tracking wildlife on snowshoes reveals large carnivores and ungulates moving from the Wigwam Flats and grassy plateaus above through the lakes corridor into the Elk Valley. Spring and autumn hiking along the eastern shore of the lakes and up onto the cliff rim is a paradise of early season wildflowers and birds, and in the fall, blazing golden larches and aspen.

Summer is when the site gets most use by locals and visitors to the region. Spectacular mountain views, dry hot climate, dramatic cliffs, and clean clear cool water attract thrill seekers to the first lake for cliff jumping. What used to be a peaceful solitary visit now includes mobs of people in July and August. Lately people have been dragging up floating toys, coolers of beer, partying and camping overnight, where no public facilities exist. People build fire rings everywhere and have open fires in a high risk, dry forest. There are no bathrooms. It is a backcountry site and requires people to practice leave no trace, pack it in and pack it out behaviour. Many locals are now hesitating to take visitors and guests up there in the summer fearing chaos, environmental degradation, parties, and unruly intoxicated people.

Elk River Watershed Alliance (ERA) volunteers have been cleaning up Silver Springs since 2011, as part of BC Rivers Day the last Sunday in September. Volunteers have noticed increased damage on the site to a point where the impact is becoming extensive, with the most troublesome impacts being human waste and feminine hygiene products, as well as garbage left by an increase in random camping with no public facilities and extensive broken glass on the rocks where people are walking barefoot to jump off the cliffs.

To ensure the sustainability of the environment and exceptional recreational experiences will require ongoing planning and community involvement. This report encourages participation and enforcement of the appropriate land use designation of BC Crown Land, managed by the Provincial Government to ensure sustainability of the resource and recreational opportunity. Recommendations for community-driven stewardship solutions range from installing a backcountry toilet, stewardship teams to do periodic clean up throughout the summer/fall, signage posting 'Day use only - No Backcountry Camping' and designate established parking.

2. Research Methodology

2.1 Background research

2.1.1. Geology

The formation of the Silver Springs lakes located on the floor of the Elko gorge has a few theories by geologists. Ben Gadd describes the formation of the 4.5 km long, 230 m deep and 350-750 m geological feature in his 'Canadian Rockies Geology Road Tours' (2008). He notes it was carved quickly by water bursting from Glacial Lake Elk in a series of jokulhlaup floods that carved out this slot in the Purcell rock (p. 272).

Local geologist from Morrissey, Bob Morris, supports the theory that the glacial debris from the dam holding back historic Lake Elk at the Highway 3 tunnel burst, resulting in floodwaters rushing westward. The dam debris encountered the Rocky Mountain Trench glacial debris at Elko, took a hard dogleg south, with enough force to deposit glacial erratics on the Wigwam Flats (personal conversation with Bob Morris July 2013). There would have been tremendous force as this dam held back a very deep lake that was high enough that the outflow was east into now present-day Alberta.

2.1.2 Ecology

Silver Springs ecology is an interface of Interior Douglas Fir (IDF) biogeoclimatic zone and Montane Spruce (MS). IDF climate has warm dry summers, a fairly long growing season and cool winters. The open to closed forests contain mature climax species of Douglas fir and Western larch. The MS overlaps with the IDF resulting in extensive young and maturing seral stands of lodgepole pine, which formed following wildfire.

The area is important winter range for ungulates including bighorn sheep, Rocky mountain elk, mule and white-tailed deer. The area supports healthy populations of wide-ranging predator species such as grizzly bear, grey wolf, cougar and lynx (Nature Conservancy of Canada, 2014).

The chain of lakes in the Silver Springs gorge, open forest grasslands to the west and forests on the flank of Mount Broadwood are cross-valley movement corridors of wildlife between the Wigwam Flats and the Elk Valley. The area is a part of the north-south corridor between protected areas in the US and more remote regions in the Canadian Rocky Mountains.

Recreational and residential development in the Elk Valley has been steadily increasing over the past few decades. Wildlife corridors are rapidly being lost and degraded from the intensification of human uses. This and other pressures, including invasive alien plants and fire suppression, are causing severe damage to natural systems in the area (Nature Conservancy of Canada, 2014). The Nature Conservancy of Canada (NCC), who owns the largest private land donation in Canadian history: the 8944 ha (22,100 acre) Mount Broadwood Conservation Area,

is the immediate neighbor to east of the Provincial crown land where Silver Springs is located.

2.1.3 Human History

Silver Springs is located within the traditional territory of the Ktunaxa, who have inhabited the region for thousands of years. Following WWI, probably with the intention of using the Elk River falls to generate electricity, entrepreneurs formed the *Elko Water, Light and Power Company*. This company laid a stove pipeline from the north outflow of the first lake and dug in a distribution system in the community. It was not dug in deep enough and during an unusually cold night in 1920, the pipe froze, ruptured and was never repaired. Part of the pipe can still be seen at the top of the steep hill hiking into the lakes (Wilson, nd).

2.1.4 Land Management/Designation of Silver Springs

According to the BC Ministry of Forest, Lands and Natural Resources Operation in Cranbrook (personal communication B. Comin, July 2, 2014), the land surrounding Silver Springs is BC crown land managed by the Ministry of Forest, Lands and Natural Resources Operation with the purpose of environment, conservation and recreation, with a specific reserve notation for fish and wildlife management. It is part of the Wildlife Management Unit 4-2 (Ferne), and falls under the Kootenay Boundary Higher Level Plan Order, Kootenay Boundary Land Use Plan Implementation Strategy and Cranbrook West Recreation Management Strategy. The BC Government recognizes that maintaining a high quality environment and experience will require ongoing planning and community involvement (BC Government, n.d., p. 11).

2.2 Public Surveys – On-site (in person) & On-line (targeting locals)

2.2.1 On-site (in person) survey summer 2013

Between August 10 and 21, 2013, an ERA summer student conducted 38 on-site surveys in-person at the bottom of the trail leading up to Silver Springs. Surveys were voluntary, and all users to the site were invited to participate. Survey results were input by the student to an on-line survey monkey site for analysis.

Summary Results of on-site survey:

- Most of the users were repeat visitors (68%) with nearly half having visiting between 10-20 times (48%) and 4-10 times (29%) previously.
- By far the greatest visitation was from Alberta (58%) followed by local users from the Elk Valley or South Country (30%), then other people from BC and Canada, with a few international visitors.
- The largest demographic of users was young adults between the ages of 18-25 (49%) with the second highest being 40-60 (27%) and third 25-40 (19%).
- 92% of the people visiting were there to jump off the cliffs or swim in the lake. Another 16% were there to camp and 13% to go for a hike.
- When users were asked who they believed was responsible for the care and maintenance of Silver Springs. 36% said the Provincial Government, 21%

believed Parks Canada managed the site. Receiving equal responsibility were the community of Elko and the Regional District of the East Kootenay (RDEK). Only 7% thought it was private land.

- What is important to users of Silvers Springs is clean water (84%), recreational opportunity (74%), scenery (68%), healthy ecosystems (66%), peacefulness (66%), short hike to the lake (47%) and wildlife viewing (45%).
- Current users viewed their last experience at Silver Springs as excellent (75%) or good (25%).
- What might deter them from visiting Silver Springs in the future is: broken glass and trash (60%), crowds (50%), unruly behavior related to excessive alcohol, dogs and human feces (30%) and fire rings with garbage (25%).
- 100% of respondents would recommend friends or family visit Silver Springs.
- To improve the amenities at Silver Springs in the future, most people thought the signage was adequate (68%), 87% would walk from a designated parking area lower down especially if it deterred alcohol issues/garbage/random camping.
- 81% would support monthly site clean ups by local community groups but only 31% said they would volunteer (which might be difficult since many respondents were from Alberta).
- Only 40% wanted to see educational/interpretive signs, with 60% not interested.
- 74% would like to see an outhouse for day use at the first lake.
- 56% of users did not want to see signage prohibiting overnight camping, although 43% were in favour of this signage.
- 43% would like to see better parking.
- When asked to recommend solutions to better steward Silver Springs respondents of the on-site survey recommended: keeping the site natural, regular enforcement, if garbage cans are installed make them bear proof, encourage volunteers for site cleanup and annual fundraisers to support these stewards as well as establishing safe zones around the cliffs.

2.2.2 On-line (targeting locals) survey monkey 2014

A social science researcher from Elkford, with an MA in Environmental Sustainability, designed the survey for local distribution targeting residents of the Elk Valley between Elkford and South Country. Between May 28 and June 20, 2014, 189 residents participated in the survey. It was promoted through the ERA website and ERA's Facebook page, Our Fernie, Fernie.com, The Free Press, E-Know and Elk Valley Herald. Direct links to the survey were emailed to the following organizations for distribution to their members: Fernie Rod and Gun Club, Sparwood Fish and Wildlife Association, Wildsight Elk Valley Branch, Fernie Tourism, Fernie/Sparwood/Elkford Chambers of Commerce.

Summary Results of on-line survey:

- 69% of respondents were from Fernie, 9% RDEK Area B, 8% RDEK Area B, Elko 7% and Sparwood 6%.
- Most respondents were between 30-45 (41%), 45+ (30%), 19-29 (28%), with just a few surveys from people under 18.
- 80% of respondents had been to Silver Springs between 4-20 times.
- Only 20% visited Silver Springs in the last year, the other 80% hadn't visited the site for 5 or more years.
- 58% noted that the quality of the environment had degraded or seriously degraded (32%) over time. Only 10% thought it had stayed the same.
- More locals (55%) go to the area to hike, than swim in the lakes (46%) and jump off the cliffs (41%). A few locals go to fish (13%) or for a picnic (26%). Less than 5% go there to camp or bike.
- 44% of locals thought the RDEK was responsible for the care and maintenance of Silver Springs, followed by the Provincial Government (39%), Parks Canada (7%), private land (7%), community of Elko (2%) and City of Fernie (1%).
- Almost all of the people go to Silver Springs with family and friends, with less than 1% going alone.
- When asked to rate the current land use protection/management of Silver Springs, locals stated this needs improvement (87%).
- 63% of locals have seen people leaving trash and damaging wildlife. Their reaction to this ranged from telling people to clean up after themselves to cleaning up after them and feeling frustrated. Many people commented that it is hard to enforce stewardship when not in a uniform or have legitimate authority, especially big strapping lads who have been drinking. Locals are already acting as stewards by cleaning up and hauling out careless users' garbage.
- 94% support seasonal cleanups of Silver Springs and 40% said they would volunteer to help out with scheduled clean-ups. Volunteers provided email contacts for future clean-ups.
- Most locals (63%) felt that people would not locate Silver Springs and were not supportive of directional signs to help people find it.
- To improve the amenities at Silver Springs locals recommended an outhouse (78%), garbage receptacles (75%), restrictions to day use only/no overnight camping (58%), better parking (28%) and interpretive signage of the unique geological and wildlife features (29%).

2.3 Youth group clean-up September 2013

Fifteen youth and adults from the Fernie Christian Youth Group volunteered 4 hours prior to BC Rivers Day in September and cleaned up the summer garbage at Silver Springs. Of the dozen garbage bags hauled out, most waste was related to people going to the bathroom in random locations and in makeshift toilets of 5 gallon buckets with toilet lids or primitive chairs with holes cut out defecating onto the ground. Another issue was feminine hygiene products. Dozens of fire rings were

dismantled as visitors were using these as garbage disposal sites. Micro glass was picked up all over the rocks where people are barefoot jumping off the cliffs. Many drink cans and bottles were collected. Float toys and abandoned camping gear was hauled out by the youth.

3. Discussion of Results and Findings of On-Site and Online Surveys

Most of the visitors interviewed on site were from Alberta. Locals have been frequenting the site for many years, visiting mostly with family and friends with a high percentage of repeat visitation. Many locals had not visited the site for more than 5 years, which may correlate with the popularity of summer tourist use, the degradation of the environment and desire to avoid summer crowds. On-site users were mostly young adults going to jump off the cliffs and to swim in the lakes. Locals use the area equally for hiking, swimming and jumping off the cliffs, but also like to go there for a picnic and to fish.

On-site users thought that the care and maintenance of the site was the responsibility of the BC Provincial Government or Parks Canada. Locals thought the RDEK was responsible for care and maintenance of Silver Springs Lakes, followed by Provincial responsibility. All users valued the health of the environment, clean water, wildlife, scenery and the exceptional recreational opportunity. On-site visitors largely rated their experience as excellent. Locals have noticed that the quality of the environment had degraded over time and overwhelmingly thought that the current management of the site needs improvement.

Many locals have witnessed people leaving trash and damaging wildlife (i.e. plants and animals) and asked people to clean up after themselves, or cleaning up garbage they see. People expressed a reluctance to enforce stewardship behavior when they did not have the legitimate authority. Locals are cleaning up and hauling out careless users' garbage on a regular basis. Deterrents to on-site visitors would be broken glass, trash, crowds, unruly behavior, dogs and human feces and fire rings strewn with garbage. Locals were very supportive of community clean-ups of the site and nearly half provided emails to be informed of the next clean-up event. On-site users also supported clean-ups, but most were from Alberta and were less available to help

On-site users value keeping the site natural and support regular enforcement. On-site and locals see a backcountry toilet as the highest priority for users to the first lake. The next highest priority was bear proof garbage receptacles. On-site and locals disagree with the posting of day use only/no overnight camping; Albertans want to camp up there, locals only want to see day use. On-site users would like to see better parking and locals mildly support interpretive signage of the unique geological and wildlife features.

4. Recommendations for Silver Springs Amenities

4.1 Install a backcountry toilet

A backcountry toilet is the top priority to better steward Silver Springs. Elk River Watershed Alliance will be developing an action strategy to fundraise for either a large pit or composting toilet.

4.2 Community clean-ups in summer and fall by Silver Springs Stewards

Community is dedicated to on-going stewardship and site cleanups at Silver Springs. The Fernie Christian Youth Group has volunteered to clean up the site every BC Rivers Day weekend annually. On-going local volunteers have come forward to be a part of the summer Silver Springs Stewardship Solutions team. Locals who gave ERA their emails will be contacted for monthly clean-ups in July and August. Volunteers will be identified with a t-shirt, nametags and equipment for cleaning up the site.

4.3 Parking

BC Hydro will be approached to ask if they would be willing to install a gate at the bottom of the 4X4 road up the hill, create a flat parking area and gravel it for users to park.

4.4 Improved management of Silver Spring lakes and gorge

The ERA will be making presentations in fall 2014 to the Provincial Government and RDEK asking for their feedback and participation in managing the lands in a more sustainable manner.

5. Summary

This report will form the basis of grant applications to the Columbia Basin Trust *Environmental Initiatives Program*, BC Hydro Community Investment, Canfor Corporate Sponsorship and Donation Program, East Kootenay-Koocanusa Fish and Wildlife Compensation Program, and Nature Conservancy of Canada, to help pay for any infrastructure projects, as well as fund on-going maintenance of Silver Springs.

The Elk River Watershed Alliance (ERA) is promoting a community-based, inclusive, step-by-step solution for the long-term stewardship of Silver Springs for locals, visitors and wildlife, particularly wintering ungulates and wide ranging carnivores who require north south connectivity corridors. To this end, ERA is committed to strengthening relationships with decision makers to better manage the land use, and coordinate community stewardship energy.

6. Resources

- BC Government Recreation Management Strategy. (n.d). Retrieved June 30, 2014 from:
http://www.for.gov.bc.ca/tasb/slrp/srmp/south/srmmp/plan/cabinet/appendix17_rms.pdf
- McPherson, S. et. al. (2014). Elk River watershed valley bottom assessment – Report to residents on river health, phase 1. Retrieved June 30, 2014 from:
<http://www.elkriveralliance.ca/sites/elkriveralliance.ca/files/Valley%20Bottom%20Assessment%20FINAL.pdf>
- Nature Conservancy of Canada – Elk Valley. Retrieved June 30, 2014 from:
<http://www.natureconservancy.ca/en/where-we-work/british-columbia/our-work/priority-natural-areas/elk-valley.html>
- Wilson, D.M. (n.d.). Elko, B.C. History. Retrieved June 30, 2014 from:
<http://www.crowsnest-highway.ca/cgi-bin/citypage.pl?city=ELKO>

7. Appendices

Appendix A: On-Site Data Analysis

Appendix B: On-Site – Stewardship Ideas

Appendix C: On-Line Data Analysis

Appendix D: On-Line – Response to Abuse

Appendix E: On-Line – Stewardship Ideas

8. Photos



Figure 1: Fernie Christian Youth Group volunteers with makeshift toilet seat used to defecate human waste directly onto the ground



Figure 2: Makeshift 5-gallon bucket used as a toilet, full of human waste