



The use of a digital map as a search interface in preserving the traditional Blackfoot worldview

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ABSTRACT

In 2006 the University of Lethbridge and Red Crow Community College joined forces in a cross-institutional effort to ensure that as much as possible of the Blackfoot (a local First Nation tribe) cultural record will be preserved and made accessible. This is being done through the creation of the Blackfoot Digital Library, presented from a Blackfoot worldview.

In the traditional Blackfoot worldview the point of departure is that all knowledge is derived from place and that humankind is created as an equal to the animals, birds and reptiles. Presenting the content of the Blackfoot Digital Library in a manner consistent with the traditional Blackfoot worldview posed a challenge. The solution was to present the user with a traditional search box for interrogating the library, but to display the search results on a digital map. The presentation informs on the challenges faced by the initiative, ranging from technological issues, trust issues and digitization, translations and cross-institutional cooperation.



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Outline

1. Introduction
2. The Blackfoot worldview
3. General design considerations
4. The map as search interface
5. Other challenges
6. The way forward



Chief Red Crow



Introduction



Big Brave



1. Introduction

The ±25 000 Blackfoot people living in Alberta (Canada) and Montana (USA) are all that remain of the mighty Indian nation that once ruled a substantial part of the Great Plains, stretching from Edmonton to the Yellowstone River and from the Rocky Mountain to the

North Dakota border (See Figure 1).



Figure 1: Blackfoot territory

The Blackfoot were known as one of the strongest and most aggressive military powers on the northwestern Plains. For a quarter of a century after 1806, they prevented British, French, and American fur traders, whom they regarded as poachers, from trapping in the rich beaver country of the upper tributaries of the Missouri. At the same time, they warred upon neighboring tribes, capturing horses and taking captives (Blackfoot, 2009).

In 2006 the University of Lethbridge and Red Crow Community College (RCCC) joined forces in a cross-institutional effort to ensure that as much as possible of the Blackfoot cultural record as far as written documents, recorded stories and photographs are concerned, will be preserved and made

accessible. This is being done through the creation of the Blackfoot Digital Library, presented from a Blackfoot worldview, which was designed to host digital versions of the various assets found on the reserves.

The inter-institutional team consists of representatives from both institutions. It also included two elders from the tribe. It was imperative for the success of the project that the Blackfoot community be included in the process right from the start.



The Blackfoot worldview



Red Crow Community College

Blackfoot Digital Library



In order to understand the Blackfoot one needs to understand how they looked at the world around them. Ihtsipaitapiyopa is the name they gave to the “Essence of All Life”. This is the Creator, the Source of All Life. Ihtsipaitapiyopa made all living things equal. Human beings were not given the right to rule over or exploit the rest of nature. The Blackfoot recognize plants, animals, and rocks as other living beings that are different from humans but also their equal. Each plant or animal has unique gifts and abilities that they share with humans. Some plants can cure diseases; others provide important nutrients to the humans. Buffalo are strong animals that once provided much of what they needed for survival. Birds are seen as swift flyers that helped warriors to be stealthy and swift. These animals visited humans in human form and taught the Blackfoot how to call on them for their special gifts (Glenbow Museum, 2009). These visits normally occurs in dreams or visions and young men are encouraged to seek these visions as that will also provide purpose to the life of the individual. This is how they became so closely connected to the beings (animals, plants and inanimate things) with which they share the land. They use the word Niitsitapi to refer to themselves; this means “Real People.”



Blackfoot Digital Library

Red Crow Community College

In the traditional Blackfoot worldview all knowledge is viewed as being derived from the land and those (animals, birds etc.) who live in it; that humankind is the latecomer to earth; that the animals, birds and reptiles are much better equipped with wisdom and knowledge to survive on this earth and therefore man has to learn from the animals. This close relationship they have with the land is beautifully illustrated in an exhibit by the Glenbow Museum (See Figure 2).



Figure 2: The Story of the Blackfoot People (Niitsitapiisinni: Our way of life. 2006.)

It is also believed that these interactions, where the animals share their wisdom, are grounded in the land and in place.

3. General design considerations



General design considerations



Blackfoot grass dancers



The land features very prominently in the Blackfoot culture and the requirement was that Blackfoot Digital Library must emphasize the Blackfoot worldview, the design team made every effort to ensure that the users of the Blackfoot Digital Library would be aware of that.

The challenge was how to go about that. The approach was to steer away from colorful glossy pictures in the design of the homepage and to present the land in earthly colors. This however resulted in a homepage that lacked impact.

One of the web designers came up with the idea of having the landscape come to life by adjusting the appearance of the land on the homepage to correspond with the time of day that the user visits the site. Pursuing this line of thought produced three different views of the land: a morning view (Figure 3), a midday view (Figure 4) and a night view (Figure 5).

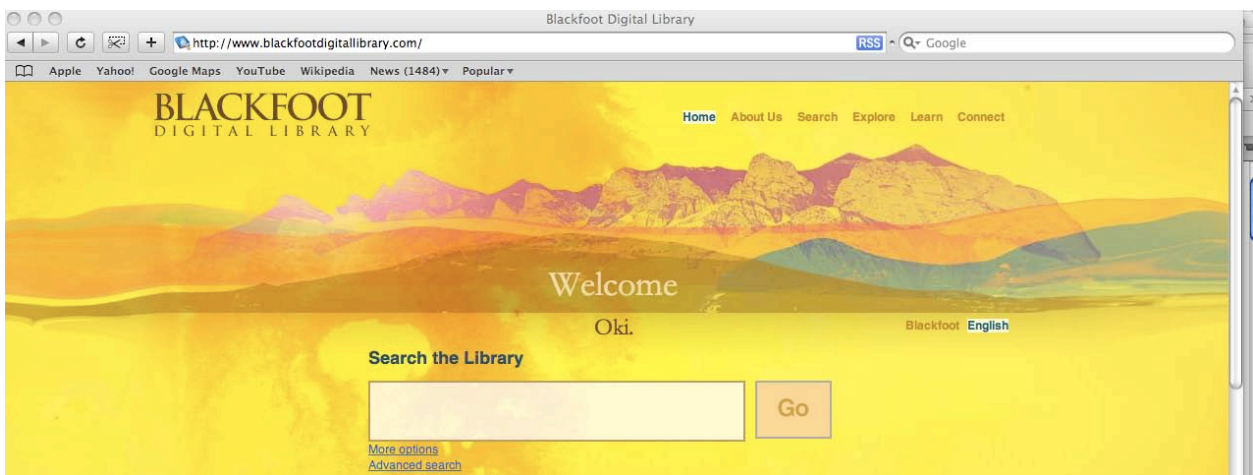


Figure 3: Morning view

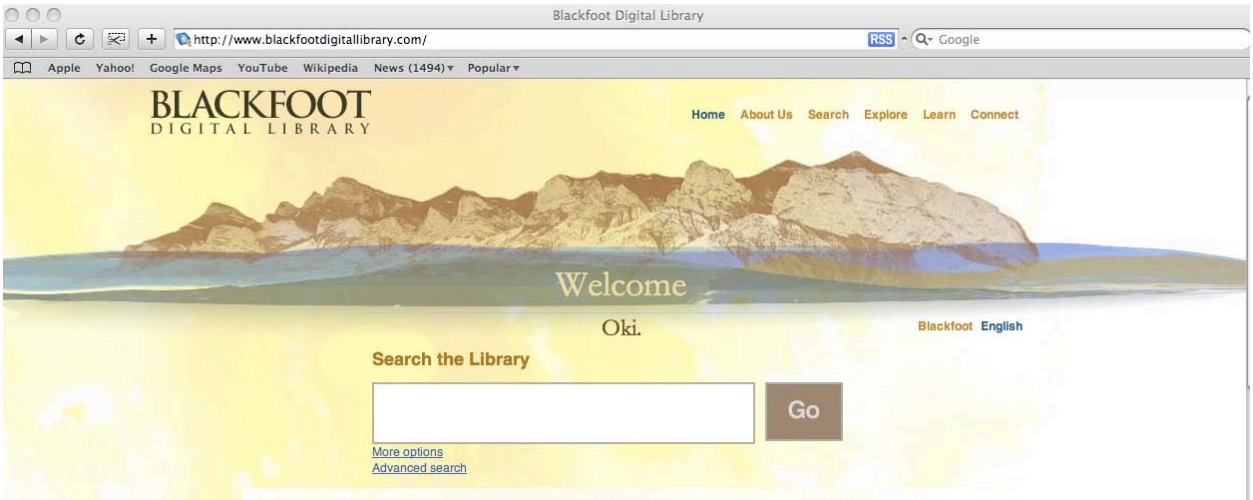


Figure 4: Midday view



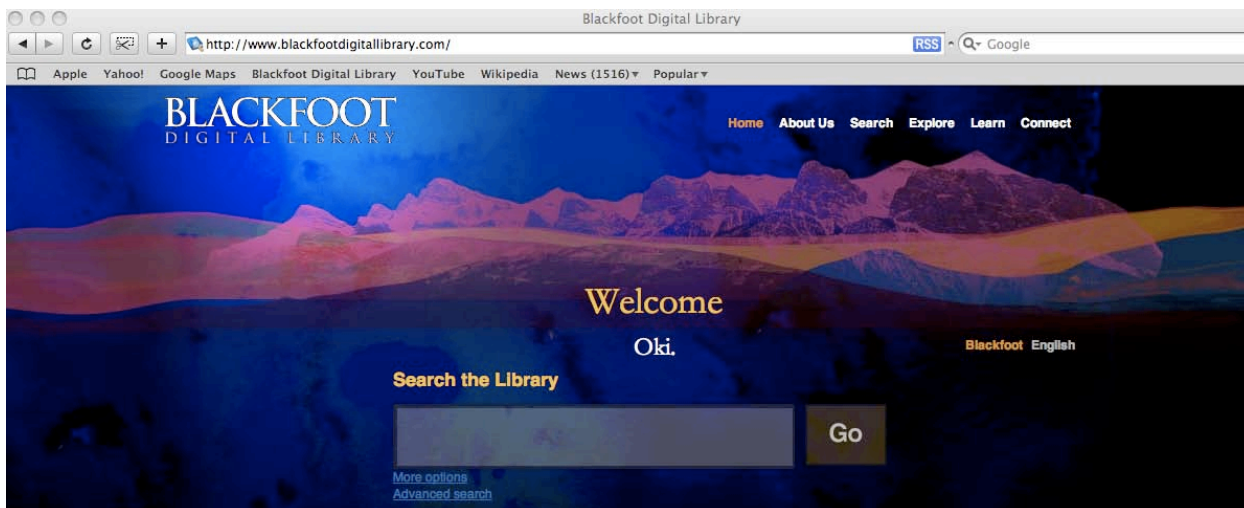


Figure 5: Night view

One of the objectives in designing the homepage, which is also the main search page, was to keep it simple and clean and uncluttered. This requirement was at odds with the



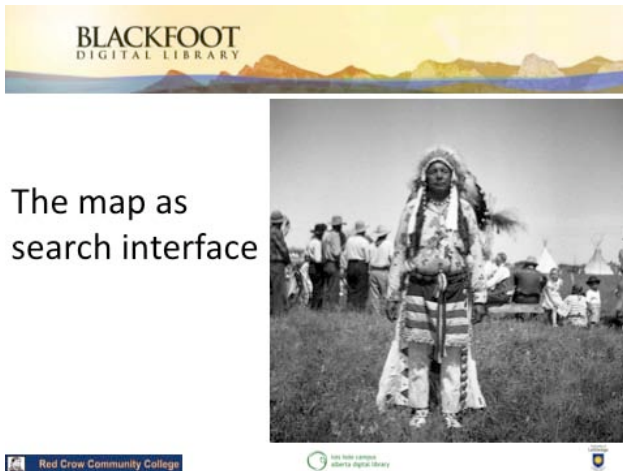
desire to showcase as many as possible of the assets within the collection. Assets that users will be unaware of unless they search for them specifically. The compromise was to showcase (Figure 6) only a limited number of items and to have new assets displayed on the homepage as they are being added to the collection which means that they will change continuously.



Figure 6: Assets are showcased as featured content on the homepage.



4. The map as search interface



The idea of not having a regular search interface but to use a map has been on the cards right from the start. Initially the concept of learning about the Blackfoot through exploring the land was envisioned not as a search interface but rather as a mechanism for browsing the collection through clicking on various parts of the map representing the Blackfoot territory. In this way the user would imitate the original Blackfoot exploring the land for the first time.

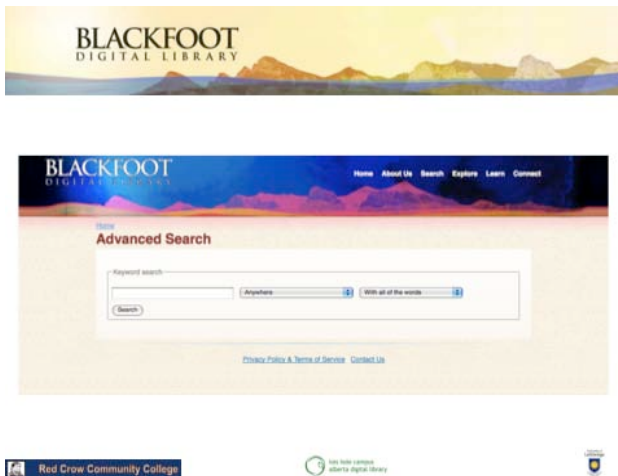
Talking this through while pointing out the normal behavior of web users: If you cannot find what you are looking for on the site you are at, you go looking somewhere else, raised some doubts. Krug (2008, p. 26) points out that: “Faced with any sort of technology, very few people take the time to read instructions. Instead, we forge ahead and muddle through, making up our own vague plausible stories about we’re doing and why it works.” These remarks support the argument that such a user interface will not serve the Blackfoot Digital Library well and that it might be more of a barrier to users.

In the end it was agreed that search functionality instead of browse functionality would be best as the primary way to explore the content of the Blackfoot Digital Library. Browsing the content is available as a secondary way to explore the library and can be done by clicking on the “Explore” link on the homepage. It was also agreed that a simple Google-like search box would be the way to go, as that is what most web users are used to.



Figure 7: Advanced Search

The audiences the library is aimed at range from primary school learners to researchers and to accommodate the latter an "Advanced Search" functionality was added (Figure 7). The user can access the advanced search by following the link on the homepage.



However, the idea of accommodating the Blackfoot concept of learning from the land was not let go. The second line of thought in this vein was that the result set of a search be presented to the user graphically on a map.



Figure 8: Panoramio: Presenting search results on a map.



Adding geographical information to assets and presenting it on a map is not new. This is similar to the concept used by Panoramio <http://www.panoramio.com/> (Figure 8) and Flickr <http://www.flickr.com/> (Figure 9), both make use of maps from Google and Yahoo

respectively.

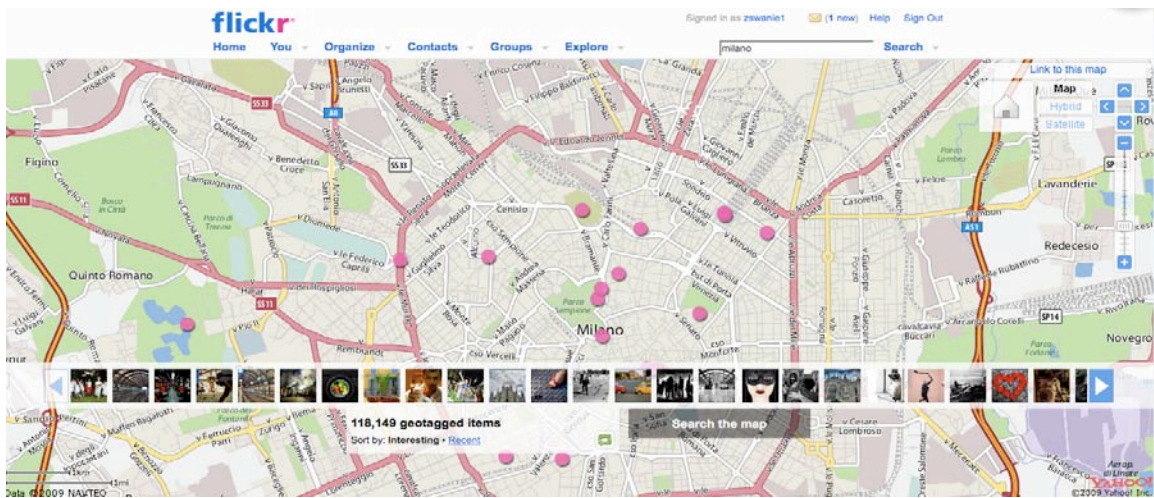


Figure 9: Flickr presenting search results on a map

However since the Blackfoot Digital Library consists of more than photographs a way



has to be found to represent other media types. Making use of different colored circles did this. A further enhancement was that the size of the circle was also designed to represent the number of assets found in the search (Figure 10).

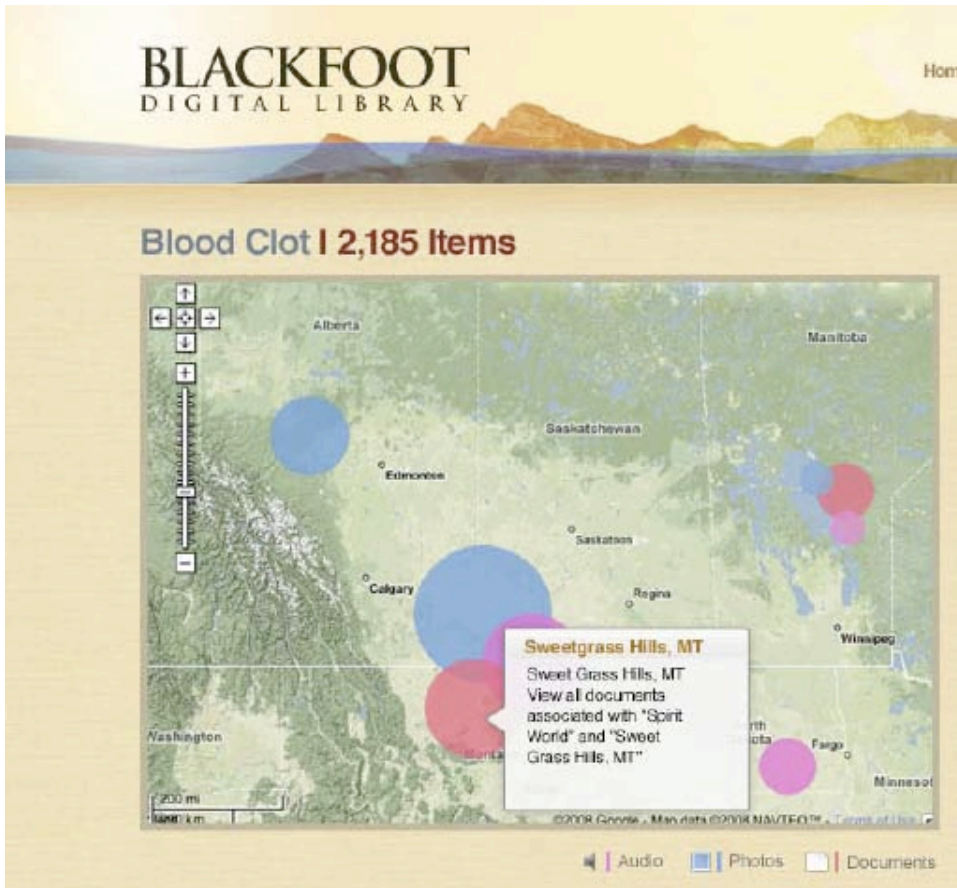
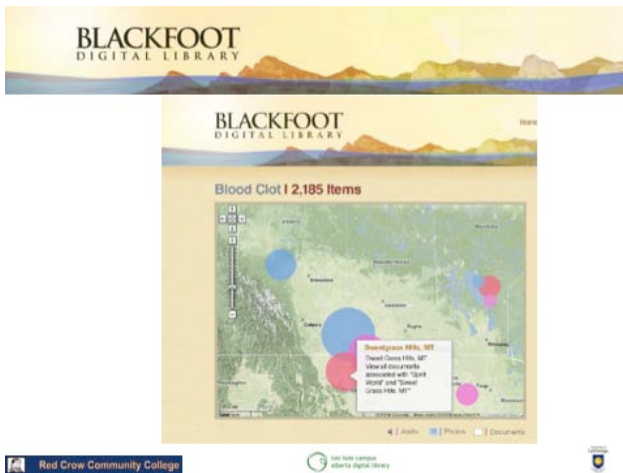


Figure 10: Search result with different colors indicating different media



In order to impress upon the user even more that the story/photo/interview originated from somewhere in the Blackfoot territory a smaller version of the results map

accompanies the next screen when the user clicks on any of the circles (see Figure 11).

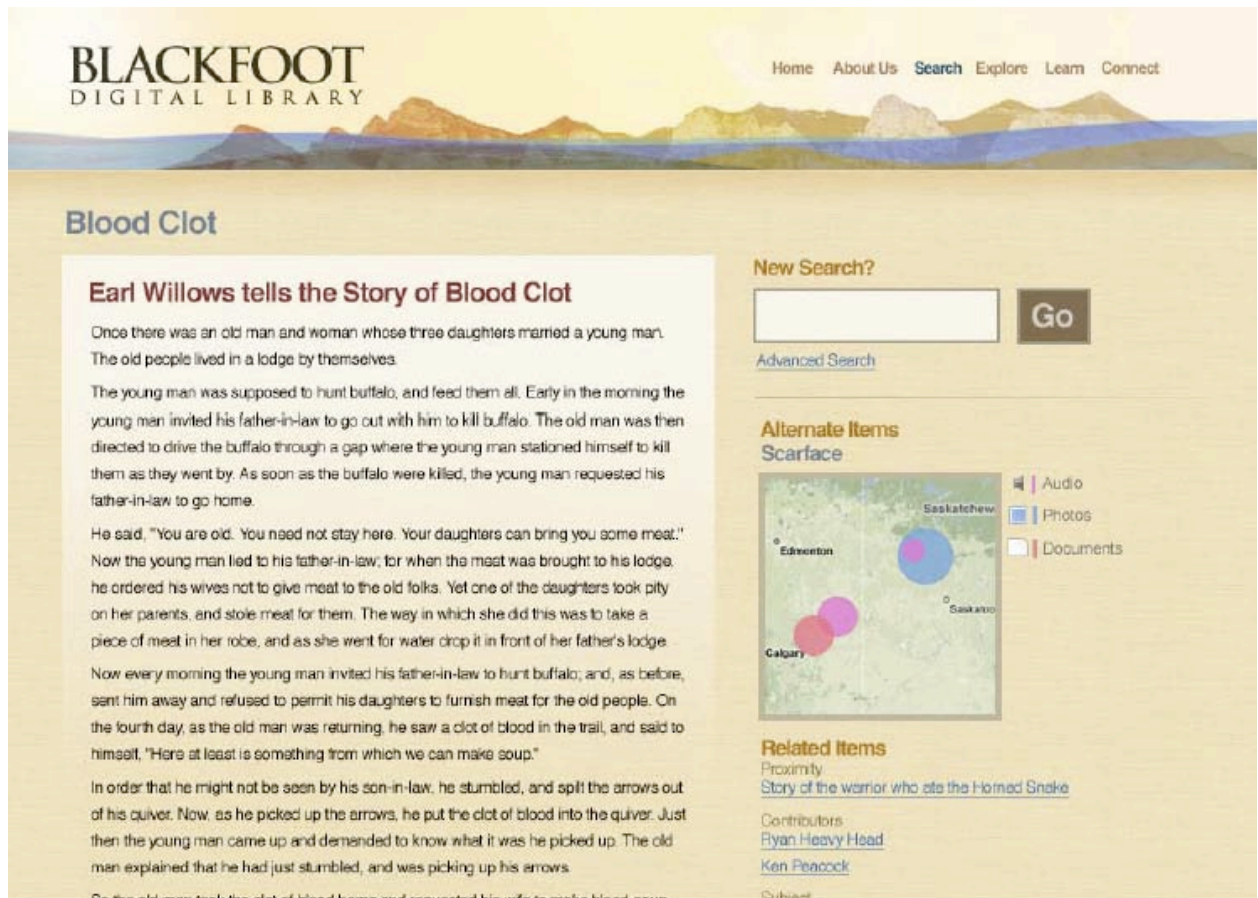


Figure 11: Smaller version of search result set.



Using gigapan technology (<http://gigapan.org/>) was briefly looked at because of its

potential to zoom close-up from afar. This was deemed impractical because it would require high-resolution photographs of the entire Blackfoot territory. The time it takes for large images to load on low bandwidth connections is also unacceptable.

In contrast to this possible high technology solution it is of interest to note that the Blackfoot members on the design team initially wanted to use a traditional Blackfoot map of the territory. There seems to be no published version of the map but it resembles an inverted tipi and is very similar to map drawn, with the help of First Nations people, by the first Europeans to arrive in Canada as can be seen in Figure 12. This photograph of the map is from the Museum of Civilization in Ottawa.

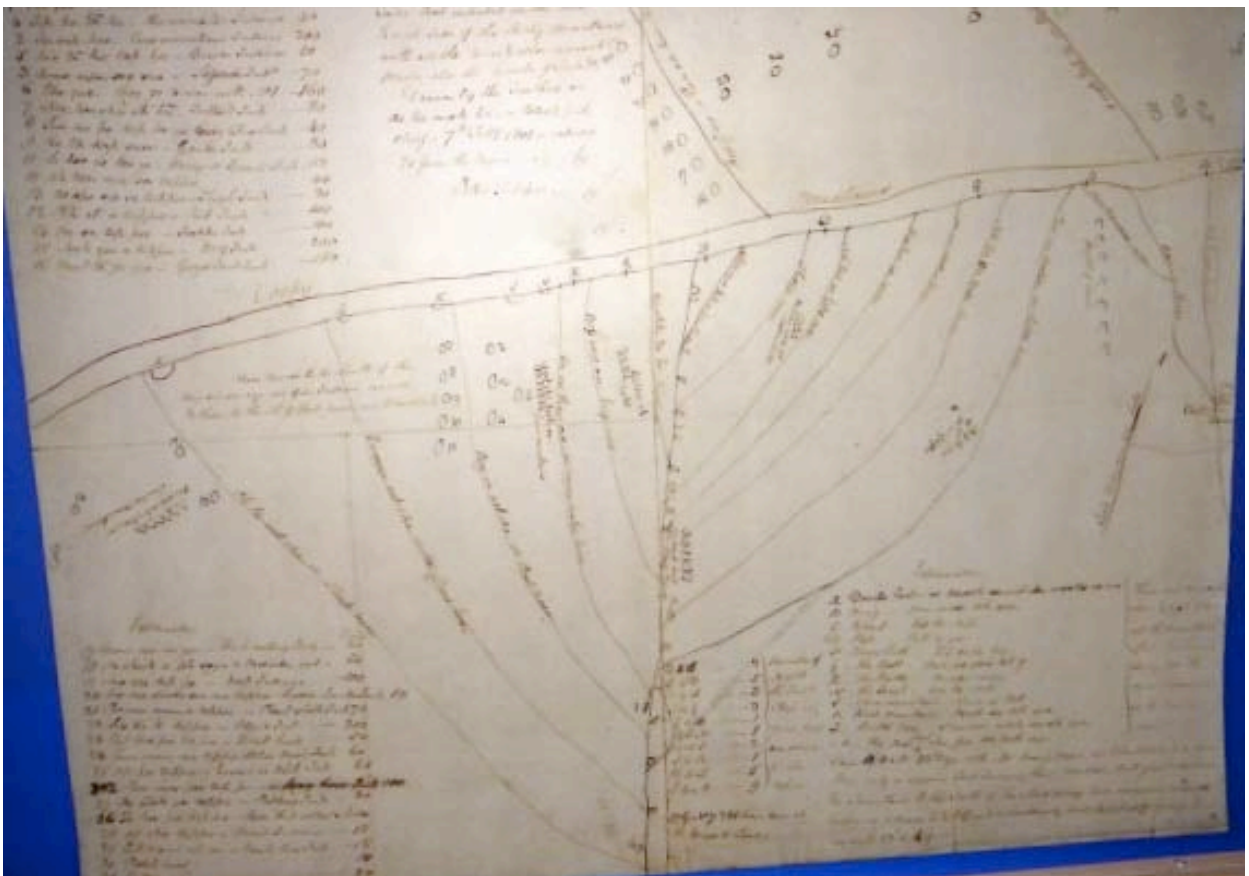
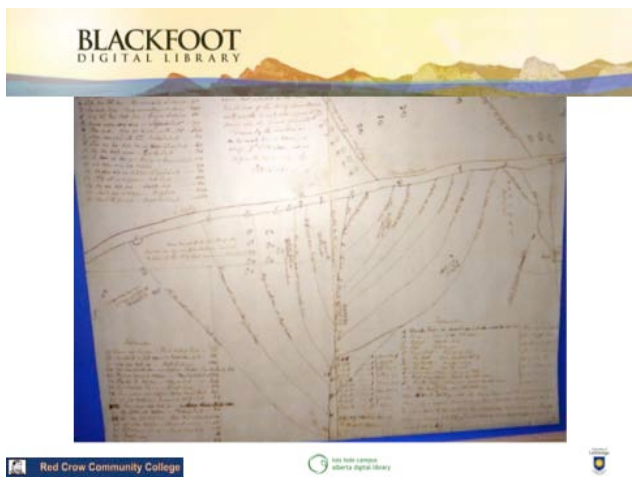


Figure 12: Map drawn with help of First Nation people.

This idea was dropped with the realization that only very few users of the Blackfoot Digital Library would recognize this kind of map for what it was and would also act as a barrier between the user and the content of the library.



5. Other challenges



There still seems to be an undercurrent of animosity under certain Blackfoot people towards the current political system in Canada, or to frame it is more positively: there seems to be a desire among a section of the Blackfoot people to regain control over their traditional land and a longing for independence. This is illustrated by the following quote from the following site: <http://www.blackfoot.org/>, site stating their rights: "Our Right of Primacy to the land and all its resources. Our stewardship to the said territory (Niitsitapis-stahkoi) which includes the right of access and management to all its natural resources to the said lands, according to what is right for Niitsitapii. Further, we declare to the Kingdom of Great Britain and its commonwealth countries; Canada, its provinces; the United States of America and its states; and the United Nations that our sovereignty has existed since time immemorial. We declare null and void the Doctrine of Discovery and all other

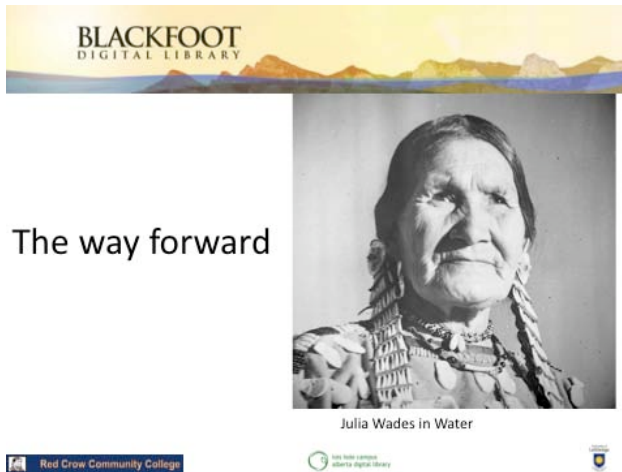
paternalistic and colonialist Proclamations, Treaties, Acts, and Regulations pertaining to Niitsitapii and Stah-koomi-tapii-akii.” (Long Standing Bear Chief, 2006).

Taking cognizance of this attitude and the claim by some members of the Blackfoot tribe that they are one of the most researched tribes among the Indians of North America (Heavy Head, 2008) there was reason for caution. Whether the claim of being one of the most researched tribes is true or not is not important; what is important is that there is a perception among a Blackfoot they are the subjects of research. This is a thought that they experience as demeaning. Therefore it was a challenge to convey to the Blackfoot people that they would participate as full and valued partners. Building the Blackfoot Digital Library was an initiative that was done **with them** and not **to them**, as they have perceived to be the case with some of the research. Including elders from the tribe in the design and planning team proved to be a good investment in this regard.

Intellectual property and copyright also proved to be a challenge. Much of the material collected (photo's and reel to reel audiotapes) was created decades ago and at the time no thought was given to copyright or to document permissions. The concept of copyright is also quite foreign to especially the older people; this was exacerbated by a culture where many physical items were regarded as being communal property. The waters were muddied in this regard by researchers who recorded traditional stories and claimed copyright to the published result. Members of the tribe had difficulty in understanding how their stories could become the property of those the stories were told to.

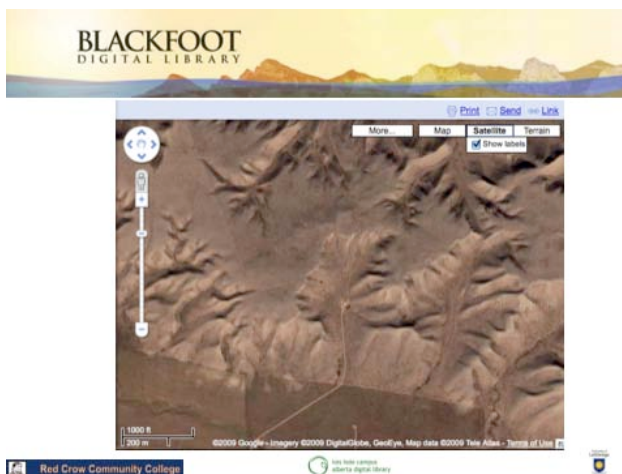
In the mid 1990's it was estimated that there were only about 5,000 – 8,000 speakers of the Blackfoot language and that the numbers were declining since those fluent in the language are older people. The decline of the language was exacerbated by the absence of a generally accepted writing system. The orthography most commonly used for writing Blackfoot on the three Southern Alberta reserves was only approved as the official writing system in 1975 (Frantz, 2001), but has seen little use, at least as far as documenting the history and development of the Blackfoot is concerned. The language issue is a challenge for the Blackfoot Digital Library since many of the recorded stories were recorded in Blackfoot and must be translated. The age of the material is also of significance because many of them date from two or three decades (or even longer) ago and the vocabulary used at the time is no longer the one Blackfoot speakers of today are familiar with. Only limited translation of stories were done as it was found to be very time consuming and therefore also expensive.

6. The way forward



From a broader cultural-historical perspective the goal of the initiative is to help the Blackfoot people create a future by building on their cultural heritage in preserving their identity as a people while also providing a resource for academics, researchers and students. This goal is still unattained but within our grasp as more and more material is being posted online.

Apart from having as much as possible of the available content already digitized posted in the collection, there is a desire to include in the Blackfoot Digital Library notable features of the Blackfoot territory such as this land formation near Medicine Hat (Figure 13).



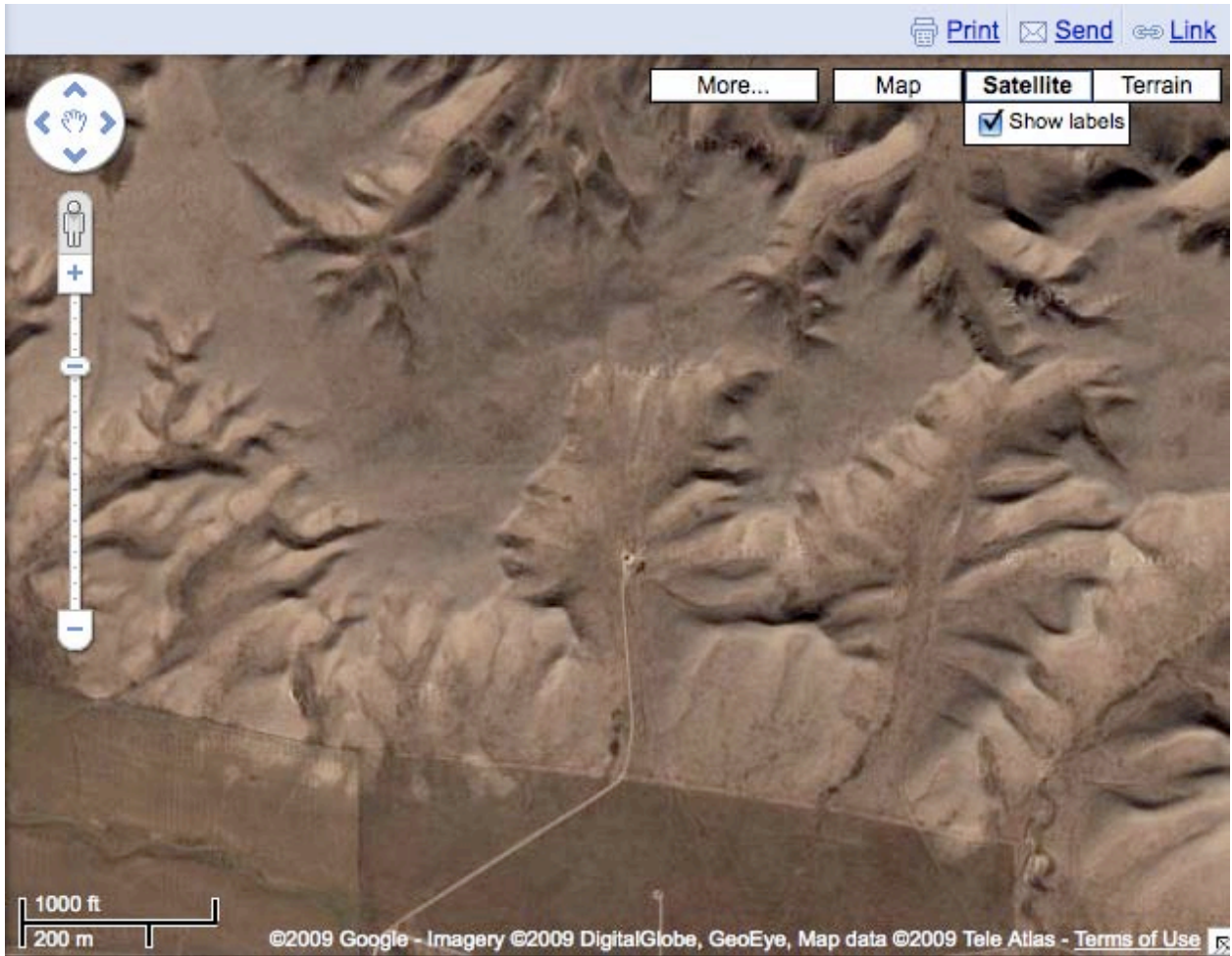


Figure 13: Medicine Hat topographical feature in Google Maps (2009)

Alternative sources of funding must also be explored as the world finds itself in uncertain economic times. However the team working on the library is optimistic and am eager to recruit new collections from the reserves to make it part of the Blackfoot Digital Library.

Conclusion



Chief Mountain

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