Community Mapping
The Recovery (and Discovery) of our Common Ground[1]

by Maeve Lydon

Abstract

Community mapping is both the recovery and discovery of the connections and common ground that all communities share. This emerging cartographic practice is a vital part of a worldwide movement for participatory learning, community empowerment and sustainable planning. Maps visually represent worldviews and knowledge and therefore have unique spatial power. Community mapping assumes that ordinary people and communities can make maps to express the stories about their lives and home places. Community mapping, as a learning and planning process, facilitates such story telling and community maps represent the stories.

This paper begins with an exploration of the power of maps and the theoretical challenge posed by indigenous and community mapping to the discipline of Western cartography. Indigenous maps illustrate the power of maps for cultural, historical and geographic expression and connectedness. They also inspire contemporary community mapping. Profiles of community mapping initiatives in Canada and a case study of Common Ground Victoria are presented with community mapping practitioner observations on mapping methodology and technology. The paper ends with the position that, as the need for community and ecological recovery and connectedness grows, so will the relevance of the unique and powerful spatial learning and planning tool - community mapping.

Personal Bio

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Maps, like theories, have power in virtue of introducing modes of manipulation and control that are not possible without them. They become evidence of reality in themselves and can only be challenged through the production of other maps and theories.

David Turnbull, Maps are Territories, 1989, p. 54

For me it is really important that learning not be always a study of what is out there, in other places, all the time. When my class were doing the geography of making their own maps, it was *their* geography, their place. Today I just came from my class and one of my kids said, "We are history". Mapping has been a wonderful way for them to develop that feeling of being a participant.

Susan Underwood, Schoolteacher, 2002

We are all mapmakers. Any community can make maps. Community[2] mapping rests on such a claim and assumption. Maps are inspiring. Maps provide a unique language for humans to communicate with one another. Maps can record great losses and discoveries, the changes of physical and political landscapes, great beauty and destruction. Maps reflect our relationship to ourselves, to one another and to the environment. They reflect the geography of our lives and communities.

Whether conscious or not, our cognitive or mental maps guide the paths and routes that make up our lives. Each of us has a different mental map, a different sense of place, and a distinct way of seeing and being in the world. In effect, we have our own stories and geographies, different physical, mental and social landscapes that we experience and inhabit everyday. How we spatially and visually represent such stories and geographies is in effect, cartography. When we do this with other people we are "community mapping."

Community maps are thus the collective representations of geography and

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[2] A Community can be geographic (i.e. local, school, neighborhood, regional, national, neighborhood, global), socio-cultural (i.e. ethnic, women, men, gay, youth, children) sectoral (i.e. education, recreation, government, police, health), and ecological (i.e. bioregional, plant, animal,

landscape, and community mapping is the process to create such representations. Community mapping "lets people think together graphically, instead of verbally" (Wood, 1994, p.24). It tells the stories of what is happening in our communities; and every community has stories, recently or long-buried in the lives and landscapes of our common ground.

One illustrative community mapping story begins almost a decade ago in the Burnside Gorge neighbourhood of Victoria, British Columbia. It involves activist Tom Arkell, who has lived for over fifty years in the neighbourhood, and Janet Strauss, who is the local elementary school teacher. The two unknowingly became "community mappers" while wanting to clean up their local contaminated waterway, Cecilia Creek.

Since the Second World War, as with many urban waterways in Canada, Cecilia Creek had become a liquid waste site and garbage dump. It had once been a significant fish-bearing waterway that ran directly into the Gorge Waterway and Victoria harbour. For centuries the local Lekwammen First Nations people had joined the blue herons and seals and harvested the fish and seafood on its banks. The Lekwammen also buried their dead at the mouth of Cecilia Creek hanging their caskets on the trees on what became named Deadman's Island by the colonists who arrived in the 1850's (Lutz, 2001).

Like most community mappers, Tom, who is now long past official retirement, did not know that he was one. Speaking at a November 2002 local community mapping roundtable, sponsored by the University of Victoria Geography Department, he humbly admitted:

> For us it has been a real eye-opener, this mapping business. It started years ago, not intentionally mapping but because of city planning. We said to the City, "We've got no parks!" They said to us, "Yes you have your share of parks, you've got Cecelia Creek Park," which was then rail tracks and concrete sewer pipes. The sewer pipes attracted homeless

biosphere)

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people and the kids had to walk through this area. We suddenly awoke to the fact that this was our park but it didn't represent anything like a park-like setting. Over the years the city and the Capital Region District (CRD) had installed a septic dumping ground in the park and their lease was coming up. The smell throughout the park was terrible. We said to the city, "we don't want to extend this lease, this is our park and we want to take it back."

In the meantime Tom had met Janet Strauss, who, according to Tom, is "a real nature lover." "The kids started to tromp these paths down through the ravine. They discovered a 7-trunk tree, the trestle, the wildlife and these started to appear in the drawings they made." Tom and Janet were inspired by the children's view of the Creek's special places and it inspired them to action. "That was the start of our mapping project, to start to put all these things together. Eventually Victoria City council said, "let's start to open up the stream –it's all underground." City Council's support led in 1998 to the creation of the regionally coordinated multi-stakeholder Cecilia Creek Restoration project. Tom further added:

> So that has been our experience with mapping. It was really a tremendous drive by the students who pushed the adults along in protecting the park. Now we are doing sketches of drains and fish habitat with the kids, wanting to reintroduce salmon.

Now in 2003, children and their families once again enjoy the beauty of the Creek. Each year more of the Creek's fish, fauna and fowl return. The nationally famous Galloping Goose biking and walking trail which links downtown Victoria to outlying areas passes along the creek and beside the aptly named Tom Arkell Trail. Classes of children, who grew up watching the creek improve and come to life, feel a keen sense of pride and ownership for their efforts in a neighbourhood where poverty and lack of opportunity is more pronounced than in most of Victoria.

Cecilia Creek is an excellent case study of how community mapping can support the discovery of local places and the recovery of community and ecosystems. Tom, Janet and other local residents used community mapping throughout the

clean up and recovery process to map and mobilize community assets: to document the past, to inventory the present and to envision the future. They documented the historical evolution of the creek; they identified its past and present features (positive and negative) from native flora and fauna, to pollution and storm water run-off sites. Future site plans that have now been realized include walking trails and community projects such as wall murals, sitting benches and community gardens. The recovery process was full of learning and discovery about many things: about history, ecology, local power and politics and most of all about listening to children, taking responsibility for one's own backyard, working together and creating positive change. These are all key features of community mapping.

There are many other stories about community mapping projects that have benefited the community or ecosystem health. Doug Aberley, and a pioneer of bioregional and community mapping (and University of British Columbia adjunct professor), has worked throughout Canada and the world using mapping as a tool for community development and planning. Whether it is working in rural Asia, or in Canada's North with indigenous groups mapping their ancestral lands, or with community activists in Canada's inner cities, he believes community maps are distinct tools and vehicles for change:

> The maps become a source of collective knowledge about place –a level of knowledge that no single individual, corporation, or government agency is ever likely to match. This leads to empowerment, and to decisions about growth and development that better helps us to achieve the goals that most of us share: social justice and ecological sustainability.

> Aberley, Northwest Arizona University, 2002.

As a movement, community mapping is making a significant impact in community learning, development and planning in Canada and worldwide. There are Tom and Janet stories throughout the world being told and made in classrooms, on city streets, in village squares and community centres, and in farmer's fields and wilderness spaces. Ordinary people, literate and non-literate, have become

mapmakers.

This paper is an exploration of community mapping and its relationship to the discipline of cartography. It attempts to situate community mapping within an historic context and offers practical examples of initiatives and lessons learned. What seems evident is that community mapping is more of a movement than a discipline. Whatever the case may be, what is becoming evident through practice is that community mapping provokes lively discussions about the meaning and practice of cartography and provides an engaging tool for community learning and planning.

The Origin and Power of Maps

Community mapping leads naturally to a discussion and debate about the origin, nature and function of maps themselves. Questions arise such as, what is a map anyway? Why do maps have power? And, why do we need maps?

Harley and Woodward define maps in The History of Cartography as "graphic representations that facilitate a spatial understanding of things, concepts, conditions, processes or events in the human world" (in Turnbull, 1989, p. xvi). Such representations, according to Turnbull (1989), could be iconic (pictorial or visual portrayals) and/or symbolic (conventional signs and symbols like letters and numbers). However, all maps represent and reflect how an individual or society names and projects themselves onto nature, literally and symbolically. Mapmaking has thus both socio-cultural (myth-making) and technical (utilitarian and economic) functions and traditions. The latter is more pronounced in the West where cartography has been professionalized as a discipline.

In the Origins of Cartography (1987), Malcolm Lewis suggested that the development of language and spatial consciousness in early humans (hominids) enabled the development of the first maps, cognitive (mental) maps. This involved the naming of symbols, place names, individuals, actions and the

sequencing of these symbols. Some humans expanded beyond oral language and wrote down these icons and symbols. They became written maps. However, whether oral or written, the belief systems or myths of those making the maps are reflected on the map itself. Thomas Kuhn, in his work on the philosophy of science, refers to this as the "paradigm," the pattern of knowledge that determines which "entities" nature is said to contain and how they behave. The paradigm creates theories, a "map" whose details are elucidated by scientific research:

> And since nature is too complex and varied to be explored at random, the map is as essential as observation and experiment to science's continuing development...paradigms provide scientists not only with a map but also with some of the directions essential for map-making. In learning a paradigm, the scientist acquires theory, methods and standards together, usually in an inextricable mixture.
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> <div align="right">Kuhn, 1970, p. 109</div>

Given this paradigmatic lens, map-making as a scientific or technical tradition can be seen as self-referencing, a knowledge system dependent always on the cultural paradigm and worldview of the mapmaker. Bender (1996), in Mapping Alternate Worlds, believes all maps –Western or otherwise– are actually "indexical." "They're indexed on people's sense of their own history, their own social relationships." Compared to indigenous maps, she says, "the Western map is equally indexical, but pretends not to be." Ronald Wright extends Kuhn and Benders' explanation of mapping to the world of myth making. A passionate writer on the history of colonial and indigenous relations in the Americas, Wright believes that in order to recover and reclaim power effectively, indigenous and non-indigenous peoples alike need to oppose and transform the discovery myth of the conqueror. He believes that:

> Myth is an arrangement of the past, whether real or imagined, in patterns that resonate with a culture's deepest values and aspirations...Myths are so fraught with meaning that we live and die by them. They are the maps through which cultures navigate through time…while Western myths are triumphalist, those of the losers have to explain and overcome catastrophe. If the vanquished culture is to survive at all, its myths must

provide a rugged terrain in which to resist the invader and do battle with his myths.

<div align="right">Wright, 1991, p. 5.</div>

The myth of discovery has guided the colonial cartographic tradition. Since the advent of perspective geometry in the 15th century, followed by the rise of colonialism and the Scientific Revolution, maps became possessions and instruments of military, cultural and economic power, and increasingly in the hands of those with colonial and commercial interests. Cartography soon became an indispensable tool of state and colonial power, while portraying the world with a European bias. Spaces and cultures were "indexed" and the geography and cultures of other spaces and places were subjugated, vanquished or colonized in the process. Until this century, the Mercator's Projection, named after the Flemish cartographer, was the standard world map with the inaccurately larger West placed on top. In country after country, maps were used as tools to accompany a hegemonic worldview and approach to territory.

Colonial maps and mapping were thus graphic representations of the myth of discovery and became key symbols and tools of power. However, vanquished people and places, mostly indigenous peoples worldwide, have resisted control and are recovering their land and culture and are providing a foundation and inspiration to community mapmakers worldwide. The myth of discovery is challenged by a vision for cultural survival and sustainability.

Indigenous Community Mapping

Traditional knowledge, both mythical and utilitarian, is represented in both cognitive and written indigenous maps. Such maps helped indigenous groups to sustain their ways of life, at least initially, while they also helped to guide the routes of colonial visitors and conquerors to their territories.
Tribal maps worldwide were, and some continue to be, made of shells, bark, wood, sand and stones; whatever local materials were available. The Inuit in Northern Canada made floatable wood maps of their islands that fit perfectly into

their kayaks; the Marshall Islanders also made floatable navigation maps with sticks to represent the currents, and shells to represent their islands. Australian aborigines made maps representing their territory, their songlines. The songlines were believed to have been made by ancestral beings who traversed the land and water and made the topography wherein "…landscape, knowledge, story, song, graphic representation and social relations all mutually interact, forming one cohesive knowledge network" (Turnbull, 1989, p.28).

Today, First Nations in Canada and aboriginal peoples worldwide combine traditional methodologies with modern technologies to create cultural, land-use and legal maps of their territories. In Australia, aboriginal groups overlay modern topographical maps onto their songline maps; and in Indonesia, indigenous groups are working with Canadian mapmakers from the University of Victoria to create what they together call community information systems (CIS) to document traditional land use and occupation and elder's knowledge.

However, in many and perhaps most cases, indigenous groups such as the Gitxsan First Nation in British Columbia did not have a written mapmaking tradition. "Our culture and the elders did not use or need maps as part of their traditions. They knew who they were and they knew whose land they were on and whose land they could cross over," said Gitxsan Eagle Clan Chief Calvin Hyzims (Lydon, 2000). Hyzims said that mapmaking has been a key foundation for the recovery of the cultural and economic power they lost over one hundred years of colonization: "The government won't recognize anyone without a map. It has been essential for the reclamation of our territory" (Lydon, 2000, p.27). The Gitxsan have been making GIS and print maps to document the different assets of their territories, based on an ongoing process of re-surveying and "ground-truthing" their territories. They overlaid elders' stories of traditional land-use knowledge with government data and filled in their own observations.

> To make the maps we walked the trails blazed by our elders years ago. We found walking sticks, shelters and food storage sites from the early

1900s. Elders had been living in these areas in 30 to 40 degrees below zero. We are re-blazing the trails and this information about our land has been used in Court as evidence of our title.

<div align="right">Hyzims in Lydon, 2000. p.27</div>

Across Canada, mapping is becoming a central tool for First Nations economic and cultural recovery and management. In some cases the process is participatory and involves many community members, while in other cases it is high-tech and run by experts or outsiders. Technology remains a major force that needs to be controlled carefully by the community. As Peter Keller, a cartographer and GIS specialist noted:

…you introduce a mapping technology and the first thing you change is the power structure because those who like and control the technology suddenly get in power. They control the technology but the technology controls what you capture. Technology begins to shape your vision of the land. I am actually making a circular argument where you can argue that society shapes value, value shapes the research and development agenda, which again shapes values; and you are going round and round.

<div align="right">Keller, Pers. Comm., 2001</div>

Those working with mapping technology in and outside of First Nations communities share this dilemma. Building long-term community capacity within First Nations communities for community and land-use planning will always include maps and mapping. This work continues to grow and is supported by such initiatives as the Aboriginal Mapping Network (www.nativemaps.org) facilitated by EcoTrust Canada.

Historical and contemporary indigenous maps and mapping inspires non-indigenous community mappers to examine their own values and relationship to their local places. Sometimes partnerships have been formed between First Nations and non-indigenous community mappers. The Gitxsan mappers have shared their mapping stories and work with many groups in Canada, the United States, and with Indonesian community and indigenous groups. They also

inspired and acted as mentors for the Victoria, B.C. urban-based mapping project Common Ground. The Gitxsan gave workshops in Victoria and on their traditional territory, sharing practices, principles and their overall vision of community mapping. The Gitxsan emphasized to the city dwellers key elements of community mapping: the recovery of local history and stories from young and old, an inventory of local economic, social and environmental assets and the importance of getting out and walking one's home territory. This partnership and the identification of common goals between a First Nations and urban community, in this case Victoria, illustrates what Canadians and all communities can have in common. As Aberley reminds us:

> …all human beings originate from aboriginal cultures. In all of us is some ability to understand relationships of physical space to survival and evolution of stable community life. In admiring the maps of indigenous cultures, the goal is not to copy others but to rediscover in ourselves a genetic memory of ancient skills.

<div align="center">Aberley, 2002, p.9</div>

In this case a rural First Nations community taught and inspired an urban project to get started on rediscovering their community, a somewhat telling turning of the mapping table; a reversal both of Canadian history and the colonial mapmaking tradition. What united both communities was a common interest in and vision of supporting community development and ecological sustainability.

Community Mapping in Practice

In the Local Agenda 21 Planning Guide developed out of the United Nations Rio Conference on the Environment in 1992 (written by the International Centre for Local Environmental Initiatives), community-based mapping is identified as a best practice for locally-based sustainability planning. Agenda 21 identified the global need for wholistic, engaging and locally-based development processes that can assist in development of local capacity and power.

Mapping as a pedagogical and planning tool has the potential to conceptualize, make and use images of place. The various components of sustainability –what constitutes a healthy community– is not defined, divided, and dissected by outside planners and developers. As British community mapping advocate Sue Clifford says: "so much surveying, measuring, fact gathering, analysis and policy-making leaves out the very things which make a place significant to those who know it well" (1996, p. 4). Community maps are asset-building tools for community development as they invite citizens to think first about what their community already has, rather than what it needs. John McKnight, a leading architect of asset-mapping and asset-based community development believes, "No amount of technology can substitute for knowledge about a real person in an actual place. (2001). Community mapping focuses on what people value and what they vision for the future. This kind of mapping is the antithesis of expert-led discourse and development as everyone's views matters and can only enhance the map.

Community mapping results in many forms and types of maps and mappers. In Canada there are many community mappers like Tom and Janet from Cecilia Creek and Chief Hyzims from Kitwanga in Gitxsan territory. People from all from many walks of life: educators, conservation and neighbourhood activists, planners, architects, community developers, teachers, boy scouts and streamkeeper groups alike are making community maps. "Ultimately," Turnbull believes, " maps and theories gain their power and usefulness from making connections and enabling unanticipated connections" (1989, p. 62). There are inspiring examples of people across Canada making and enabling connections through mapping that benefit their communities and the local ecosystems.

In British Columbia schools children are making walking-to-school maps, and "walking schoolbuses", for personal and ecosystem health, safety and community building (ICBC, 2002); in Calgary a Youth Project used community mapping to develop a local plan to convert the army base into an eco-park (Sustainable

Calgary, 2002); in Quebec, the Algonquin First Nation made composite maps to create a local resource management plan, and included spaghetti maps of trap lines and elder's map biographies; in Montreal, the Eco-Montreal Green Map "Tiotiake" begun at the University of McGill has expanded into the community and is used by the city ward system to identify local resources and needs (Green Map System, 2003 and Zuber, 2003); on British Columbia's Gulf and Coastal Islands hundreds of local residents and artists participated in the Salish Sea community mapping project by making artistic community maps and atlases of their local assets and history (Land Trust Alliance of B.C., 2003); in Yellowknife, a Northern Canadian community, green mappers created 10 Northern "low-impact winter activity' icons as part of their Green Map (Canadian Parks and Wilderness Society, 2003).

These efforts all have two features in common: one is that community mapping is not mapping *for* or *of* a community, it is mapping *by* the community of their values, assets and visions for the future. The other is that technology, when used, is a tool to accompany the community learning and building process. Hand drawn maps and community learning opportunities such as workshops, outreach and walkabouts, are the basis of most of the efforts.

YellowKnife Green Map Icons

Almost anything can be mapped. Examples of community mapping projects fall under different themes:

- Heritage (community history atlases, heritage trees, sites and elders stories, walking tours, lost streams and species);
- Conservation (greenways and spaces, local farms, habitat and sensitive ecosystems, underground water sources, toxic sites, fruit trees, vacant land for community garden sites);
- Community Planning (neighbourhood plans, traffic flow, trouble spots, unsafe and high crime areas, housing types, gentrification, income and services, health issues);
- Schools Curriculum[3] (language arts, social studies, math, information technology, fine arts, physical education, science, personal health and planning); and
- Economic development (capital flow, resource use, opportunity sites, markets, income and demographics).

Common Ground Victoria has focused its efforts on making and enabling connections by facilitating mapping with community members of different ages and backgrounds, documenting the community mapping process and sharing the learning provincially, nationally and internationally. Their effort is based on a working partnership with schools, neighbourhoods, local community organizations, and municipal and academic groups. International interns have worked with Common Ground and have shared their experience in community mapping with communities in Argentina, El Salvador and Cuba. Common Ground is also part of the International Green Map System's international advisory group and has helped link community mapping methodology with green mapping. Leveraging and connecting local resources, and creating community and institutional partnerships have been the foundation of Common Ground and its public GroundWorks Learning Centre.

The local Camosun College and the University of Victoria Geography

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[3] Sobel's Mapmaking and Childhood gives an excellent overview of children's worldviews, curriculum and learning links. The Green Map System (greenmap,org) offers excellent on-line

Departments are directly involved in this project and share their own cartographic and research resources and expertise. In turn they receive a "living laboratory" for their work. The UVIC Geography Department has helped develop the Greater Victoria Regional Green Map, and has provided student research support for their neighbourhood, school and regional projects.

University students have been involved in many projects: they have helped local schools and teachers by providing workshops and developing a curriculum kit for mapping projects, they have analysed the 700 hand drawn maps by residents of existing and proposed local greenways sites onto a GIS system, they assisted with youth asset mapping workshops, and created a map showing all the publicly owned municipal vacant lands.

Community mapping projects can meet diverse community needs. For example, Common Ground has worked with:

- Youth and community groups who make life or memory maps such as personal journeys and favourite childhood places as a way to deepen respect and understanding;
- Immigrant and refugee youth to share their childhood memories and experience of Canada;
- Emergency food providers in the region to connect people, needs and assets, and to identify service gaps and action projects;
- The Victoria Fruit Tree project (which has now expanded to other B.C. communities) to map excess fruit and redistribute it to food banks;
- Grades K-7 in a local elementary school who documented kids use and values of the city's widely used Beacon Hill Park.
- A national community health research and action project to identify the health needs and community assets in a neighborhood as the basis for community participation and development projects.

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resources for learning and ideas for community projects from kids and youth worldwide.

Community mapping is also an effective tool to involve residents in city-wide land-use planning. In 2002 Common Ground used community mapping as the main tool to involve local residents in the development of the City of Victoria Greenways Plan. They created a map survey for individuals to complete and held education, outreach and mapping training sessions with local community and neighbourhood leaders. Mapping "animators" (local volunteers) then went to local workplaces, meetings, markets, shopping centres, liquor stores and other events and solicited map surveys and composite maps from over 700 citizens. The citizens were asked to map their everyday walking and cycling routes, the community and environmental assets and sites that they use and value, and their visions and ideas of what could make the City a greener and more walkable city. This process created a widespread involvement and enthusiasm for the next stage of implementation and funding that would not have been possible if a small group of planners and mappers had created a plan *for* citizens.

From mapping favourite childhood places for personal and group development, mapping excess fruit for food banks, to creating a city-wide land-use plan, all these map processes are about community connecting and building based on sharing lived experience, values and visions. To link nationally and globally, Common Ground and many worldwide community mapping efforts work closely with the International Green Map System. Green Map's on-line tools and international linkages have been a foundation for inspiring and empowering them and other community mapmakers worldwide.

Sharing Learning about Community Mapping

At a recent Community Mapping Network Roundtable hosted by Common Ground and the University of Victoria Geography Department community mappers reflected on what they are learning in the process. The twenty five community mapper participants (educators, professional mappers, and neighbourhood and community activists) have worked in Canada and with

groups all over the world (one group worked with indigenous groups in Asia and Africa and another made maps with over 200 participants from 30 countries at the United Nations Children's Conference on the Environment). Their comments are included directly below and interwoven with remarks from participants in Common Ground's experience.

On Community Mapping Methodology:

- Keep the learning atmosphere focused on listening and making connections between people and their local place. Make sure mapping sessions, inside and out, are comfortable, friendly and guided by a skilled facilitator.

- When working with hand-drawn or topographical maps, have participants gather around a table, 4-6 per group is ideal and encourages everyone to share.

- Involve as much as possible children and elders (seniors and long-term residents). When working with children, remember they see the world and space in different ways at different ages. With elders remember that they have plenty of stories and experience to share and may not want to draw or use maps.

- Be clear about why you are mapping and what you need and want to learn about the community. Breaking down categories of maps can be helpful for inventory and projects: i.e. Tactical (specific purpose and planning oriented) and Strategic (social change and vision), or along sustainable development lines: i.e. Natural and Built Environment, Economic and Socio-Cultural features. The Green Map System breaks this down further into Mobility, Infrastructure, Nature- flora and fauna, Land and water, Toxic hot spots and pollution sites, Renewable resources, Information and Economic development.

- Keep the directions simple and encourage people to draw and write directly onto a base map or to make their own mental maps. Using icons and numbering special sites linked to post it notes with a longer description are easy ways to gather information and not clutter up the map. Forget about technical accuracy when gathering the stories and ideas of local citizens. The important thing is that they share stories and ideas. Hand-drawn and mental maps are valuable ways to start talking about a place. Involve and train locals who have technical interest in putting the stories and inventory on maps if that is necessary.

- Use a wide range of materials and mediums: colours, clay, tapestry, photos, written narrative, hand-drawings when making a community map or atlas.

On Using Computer Technology:

- We began with GIS and ended with CIS, community information systems. By adopting community methodologies, we put the tools into the hands of the community so they can decide how to use them. The aim is for these people to define their role themselves.

- Use technology if it supports the community development and planning process and vision and it will help you influence decision-makers. However, keep it as accessible and affordable as possible. Arc Explorer is available for viewing but not to create your own data maps: With DIVA you can create your own point data. Other open source free mapping software may be available but it is not for beginners. Community mapping groups use web technologies to increase access to their mapping and there is a wide range of web tools available. There is still issues related to web access by communities and print maps are still vital to create so that everyone can touch and possibly have one.

- Beware of IFS - info fatigue syndrome – decide on some tangible and incremental outcomes that people can see and celebrate especially with long-term map and planning projects that involve collecting huge amounts of data. The process should be engaging but small examples of achievements; i.e. finishing a community resource map, creating a walking tour booklet, a kid's guide to the local park or educational and map outreach tools such as stories or simple maps.

- It is important to provide a "commons" to ensure access to information

- Attention needs to be paid to source and quality of data

- Combining GIS computer mapping with social mapping is very powerful

- Community mapping creates dialogue between experts and non-experts - the process of creating the map is as important as the map itself.

- Transferring community mapping to computers goes against the grain, it doesn't fit in the box

- Maps are all about the purposes. In distinguishing the process from the product it is clear that the different purposes that people have affect how they interpret mapmaking

On the Community Mapping Process:

- It is very important to evolve vision before trying to insert community mapping into a planning process. The community mapping project becomes the keepers of the vision.

- The most successful green map projects are those that combine youth projects with city-wide projects. Working alongside adults helps students develop skills related to investigation, design, written and oral communication, agriculture, stream and park restoration and more.

- Involving children is the most important aspect of community mapping because they come at so totally unbiased…they will tell you things as they see it and they are also so egocentrically oriented. They don't have the biases of a geocentric world.

- Mapping is a visualization tool rather then an expert communication tool; in

today's world you don't have such a thing as a permanent map anymore. It is a database that you pull out when you need it and it can continually change according to different needs

- The community mapping process is entrenched in specific power relationships

- Community mapping is a gift-based assessment of people and place

- There are always issues of protectionism and the individual vs. the collective

- Information is power; community mapping is about transforming power

- The focus of community mapping is learning

- Community mapping is about building and defending diversity

- Community mapping is intergenerational and inclusive

- Community mapping has a diversity of approaches but a common thread, connecting people to their surroundings and bringing out people's knowledge of and relation to their places.

- Community mapping is all about people in the community being able to participate meaningfully in decision making

- It is important that the community has the opportunity to develop the research, data collection, information that is used in the mapping/planning process

- Who makes the maps can often control the agenda discussion - it is about power

- "Community mapping" may be about groups in the community - not really the community as a whole - taking the power of map making and decision-making away from the traditional surveyors.

- In a First Nation there is usually an obvious body who can represent the "community" - direct democracy so to speak - who more easily represent the community. In non-aboriginal communities those bodies do not usually exist.

- What is "community" really - the process of community mapping rarely includes all segments of community - but mapping may be a way to engage more people in the process. Much more intuitive than reports and fancy words. Brings out the artists and visual thinkers. Does it exclude the artistically challenged or artistically fearful?

- Community mapping means many things to many different people. There is often confusion as for some it is necessarily geographic and for others they use "mapping" in a non-geographic sense. I think the term is so widely used it actually confuses the situation rather than enlightens the discussion. Might need more words in the English language.

- There is a range of practice from a learning/visioning/collaboration process on one end of the spectrum where it is a forum for people to express ideas to a standardised, usually computer based tool where accuracy and precision need to be emphasised as it forms part of institutionalized process on the other end of the spectrum.

- Community mapping is inspirational and should be an end in itself

Conclusion

In the opening quotes, Turnbull stated that maps are evidence of power and reality and therefore to change this we need to create new maps. Underwood, the teacher, spoke about how her children have taught her through community mapmaking that we make our own geography and that we *are* history.

Community mapping wakes us up and invites us to become geographers and historians in a living world. The process invites and requires us to become active participants, to become *subjects*, as popular educator Freire[4] says, of our unique lives in a mysterious and constantly transforming world.

What is it that makes you and your place different, recognizable? How do you know who and where you are? These questions (to paraphrase Common Ground UK) are central to community mapping inquiry. Community mapping opens up cartography to the amateurs. It asks participants to share their experience, their values and their vision about a particular place. There is inherent power in naming someone, something or someplace. It is about empowerment, and

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[4] Paolo Freire, the famous Latin American pioneer of popular education believed in the power of people, particularly those impoverished and subjugated to become active subjects rather than passive objects of history. In Pedagogy of the Oppressed he writes "The dialogical theory of action does not involve a subject, who dominates by virtue of conquest, and a dominated object. Instead there are subjects who name the world in order to transform it." (p.167)

thereby facilitates the transformation of power. Community mapping breaks down the alienation that can result from a technology-driven culture. It requires people to dig into the past, to walk their local territories and streets and to talk to their neighbours, especially children and elders.

> Somewhere between the rainbow and the Internet, a place that is important to you is struggling to maintain its integrity…Whatever happens on the worldwide web, shards of histories, ecologies, economies and cultures are heaped and shifted on bits of land. Many of us understand ourselves in the world as much through a relationship with a patch of ground (or more than one) as with people –indeed it is hard to separate them.
>
> <div align="right">Sue Clifford, 1996, p.3</div>

Community mapping for sustainability is part of a new foundation for planning, one based on inclusion and participation, that recovers the connections to nature and community. As the impoverishment and reduction in diversity of human communities and ecosystems continues, communities worldwide require creative ways to address issues and recover vital connections to nature and one another. How communities are planned is key to this transformation to sustainability. Maps can be directly linked to these plans. As Tim Elkin, a College mapping instructor and former town planner states, power is not usually given, it is taken. Communities therefore need to find ways to take back power in transformative ways:

> Plans, especially detailed plans, are based on maps -the plan lays out the use of land-, if people aren't involved in deciding what constitutes the important features or components of the city by discussing and mapping it, then in the minds of planners, these do not exist. That is why we need learning and dialogue opportunities such as community mapping.
>
> <div align="right">Elkin, Pers. Comm., 2001</div>

Why does mapping hold such transformative power and potential?

To summarize, mapping is spatial discourse that literally and metaphorically represents fundamental social and cultural constructs. First, mapping reveals

worldview: Whose and what spaces and home places are acknowledged or marginalized by the mapping process and products? We can re-present worldviews through community maps which acknowledge cultural and ecological diversity. Second, mapping reveals and links knowledge, learning and power. Mapping and maps represent power and reality. Community mapping can assist in transforming power relations from exclusive and elitist to inclusive and community-based ways of knowing and learning. Involving children and seniors, those who see the world with unique eyes results in new visions and experiences. Third, mapping is a practical tool for sustainable and community-based planning. Community mapping acknowledges the visible and invisible layers that make up a place; existing and forgotten values, voices, place names, species and history. This can be used as the basis for visioning the future.

The writer Marcel Proust is attributed with the saying "The real voyage of discovery consists not in seeking new landscapes but in having new eyes." Seeing our home places through one another's eyes supports both the recovery and re-discovery of the place we call home, whether we are descendants of the colonizers or the colonized. The history and growing body of community stories and maps from the First Nations mapping movement in Canada, whose ancestral territory we live on, is a primary source of inspiration and learning for other Canadian community mappers.

> Maybe you make maps of where the hunters go and where the fish can be caught. That is not easy. But easier, for sure, than drawing out the trails to heaven, but they were down by the good men who had the heaven dream, who wanted to tell the truth. They worked hard on truth.

Atsin, Beaver Indian testimony told to Hugh Brody in Maps and Dreams p.46.

Finally, Atsin reminds us of the ultimate power of maps –their symbolic and material power to tell the truth about life and the land. Community mapping can help harmonize cultural needs, such as myths, visions and the spiritual need for belonging, with practical daily life. In colonized places like Canada, it can aid in

creating new cultural spaces for living in a more respectful way. Community maps can evoke passion and imagination, encouraging people to share what they care about and to dream about the future - together.

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Appendix A - Websites and Resources for Community Mapping

WEB SITES

Aboriginal Mapping Network
www.nativemaps.org
Examples, stories and connections to mapping in over 100 indigenous
communities. Managed by Eco-Trust Canada.

Common Ground Community Mapping Project
www3.telus.net/cground
Information, articles, and links on community-based mapping and links to related
education, planning and sustainable development projects and groups.

Common Ground UK
www.commonground.org.uk
Stories of the parish community mapping in Great Britain including profiles of
community restoration and art projects.

International Green Map System
www.greenmap.org
Profiles of this globally connected, locally adaptable framework for community
mapping. Includes on-line resources, direct examples and connections to green
map projects across Canada.

Eco-Trust Canada
www.ecotrustcan.org
Information on sustainable community resource management, including
community mapping.

Kids and Community Planning
www.planning.org/kidsandcommunity
Information for educators and students to discover and design the local
community through innovative planning exercises including mapping.

Environmental Youth Alliance
www.eyabc.ca/youthmappers
Information on this Vancouver city-wide community asset mapping project that
connects youth, youth services and planning processes

Artistic Community Mapping
www.landtrustalliance.bc.ca/public/salish.html
Maps and background information on an extensive community mapping initiative
undertaken in various islands between Vancouver Island and the Mainland of
British Columbia (including the Gulf Islands).

Community Mapping Network
www.shim.bc.ca
Profiles, stories, maps, tools and links to natural resource conservation mapping
projects – coordinated by Department of Fisheries and Oceans Canada.

Canadian Mapping Resources
www.nrcan.gc.ca
Extensive information, data and links to map resources and sustainability
initiatives for educators, researchers, community developers and the public –
coordinated by Natural Resources Canada.

Sustainable Urban Neighbourhoods
www.urbed.co.uk/sen/design-principles.html
Eight design principles for designing a sustainable urban neighbourhood.

Integrated Approaches to Participatory Development
www.iapad.org
Participatory 3-D mapping and methodologies for local development based on
case studies in the Philippines.

Indonesian Participatory Mapping Network or Jaringan
Kerja Pemetaan Partisipatif.
http://www.bsp-kemala.or.id/partner/jkpp.htm
Profile of an extensive Indonesian community mapping network focused on
participation, land rights, and the mapping of natural and marine environments.

American Planning Association
www.planning.org
Connections to learning resources and participatory projects on planning.

Resources Zine
www.planning.org/resourceszine
Online Resources for Teaching and Involving Youth in Planning.

PUBLISHERS

Community Asset Mapping
ACTA PUBLICATIONS
www.northwestern.edu/IPR/abcd.html

Community and Community Economic Development
CENTRE FRO COMMUNITY ENTERPRISE
www.cedworks.com

Community and Social Transformation
NEW SOCIETY PUBLISHERS
www.newsociety.com

Community and Institutional Planning and Change
AMERICAN PLANNING ASSOCIATION
www.planning.org

International Planning and Change
INSTITUTE OF DEVELOPMENT STUDIES
www.ids.ac.uk/ids/publicat

Community and Global Planning and Participation
EARTHSCAN PUBLICATIONS
www.earthscan.co.uk