

# Community Mapping Network SUMMARY REPORT



SHARING NATURAL RESOURCE  
INFORMATION





# Summary Report

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**Summary Report**

# **The Community Mapping Network (CMN)**

There is a growing interest from communities and stewardship groups to take a more direct role in environmental planning and management. These communities are looking for encouragement, information, guidance and the tools to undertake the tasks.

One of the greatest challenges for government is to reach out to communities. CMN has been very successful in the last few years in completing several important community mapping projects. Better information results in better planning, and CMN is an example of some of the concrete results. There is still so much more to do. Coastal Zone Planning and watershed-based planning requires accurate, up-to-date information. New data is needed, and CMN is taking the initiative in helping communities collect this data.

When deciding what new directions to pursue, however, it is important to step back and look at the progress that has already been made. The CMN has launched a number of successful projects in the last few years. This report demonstrates how the CMN has helped communities with resource planning, and showcases some of the CMN's recent successes.

## ***An introduction to the Community Mapping Network***

### **■ *Why the Community Mapping Network (CMN)?***

For the past seven years, the Community Mapping Network (CMN) has collected natural resource information, maps, and mapping information from BC Communities. This information has been used in for land use and community planning, storm water management, emergency response, habitat restoration and enhancement, watershed planning, coastal planning, development referrals and impact assessment, as well as research and education.

### **■ *Who uses CMN?***

The CMN integrates data from many sources and makes it accessible at no cost to non-government organizations, communities, the public, government agencies, and industry through an interactive Internet-based mapping and database system. CMN works closely with community groups, municipalities, planners to make data accessible to the public.

There are many users of CMN services. Some users are highly technically trained in Geographic Information Systems (GIS) and mapping, but many have no training at all. The CMN is fully web served, and is accessible to anyone with an internet connection.

### **■ *What data is available on CMN?***

CMN has thousands of datasets that cover many areas of BC. You can create maps online using a selection of any of these datasets. In any sample map, your datasets could include

- Water systems
- Transportation
- Utilities
- Streams and fish habitat
- Soil Types
- Jurisdictional boundaries
- Vegetative cover

The CMN online format is easily accessible from any computer with web-access. Information can be updated or added online with the click of a mouse. When adding data, password protection measures ensure accuracy of the information.

### **■ *How is this data used?***

Data on CMN is used in:

**Planning:** greenways and protected area mapping, community and neighbourhood planning, development permits, watershed planning

**Resource Mapping and Restoration:** mapping invasive plants, rare and endangered species, riparian and aquatic areas, wildlife habitat, fish distribution and watercourses

**Engineering Tools:** determining impervious surface cover, managing storm water drainage, ditch maintenance (for settled and agricultural areas)

**Tools for Regulatory Compliance:** streamside protection regulations, local government zoning and development permit areas, watercourse classification, Land Covenant registry

**Sensitive Habitat Inventory and Mapping methods (SHIM):** mapping clearing house

### ■ ***Why is CMN necessary?***

Traditionally, federal and provincial agencies have been responsible for ensuring habitat protection. For instance, when an interagency referral is received for an environmental review of a development project, government agencies must respond. However, their ability to respond is piecemeal as a variety of staffing and financial constraints often prevent comprehensive assessment and follow-up.

Government agencies benefit from CMN because of time and cost savings, since they do not have to collect the data. And when communities are involved in collecting and managing resource information, they are better able to promote its use in local and regional planning.

### ■ ***Why has CMN been so successful?***

CMN is different from other information providers. Because CMN builds its expertise locally, CMN members build on each other's investments and are able to customize applications to meet individual communities' needs for mapping and inventory information. CMN is sustained through partnerships with communities, who do both data collection and updates, while CMN provides a web forum for data dissemination and assistance with data collection methods.

CMN is unique because it builds networks and focuses on outreach. The CMN format uses government data and government standards integrated with data from communities. In this way, CMN provides a cost-effective service that extends the capability of most government agencies, by integrating community and government natural resource information.

CMN provides many opportunities to communities for training in data collection and data analysis. In turn, communities contribute their knowledge. It is an example of successful co-operation between government agencies, non-profits and the private sector.

### ■ ***How can you get involved with CMN?***

As a CMN community partner, you can contribute data to the system or volunteer to help sustain the network. The more individuals and groups that become part of the community mapping network, the greater our knowledge of the general health of natural resources in a community. This knowledge is essential for creating appropriate policies in BC to ensure the conservation of natural resources and biodiversity.



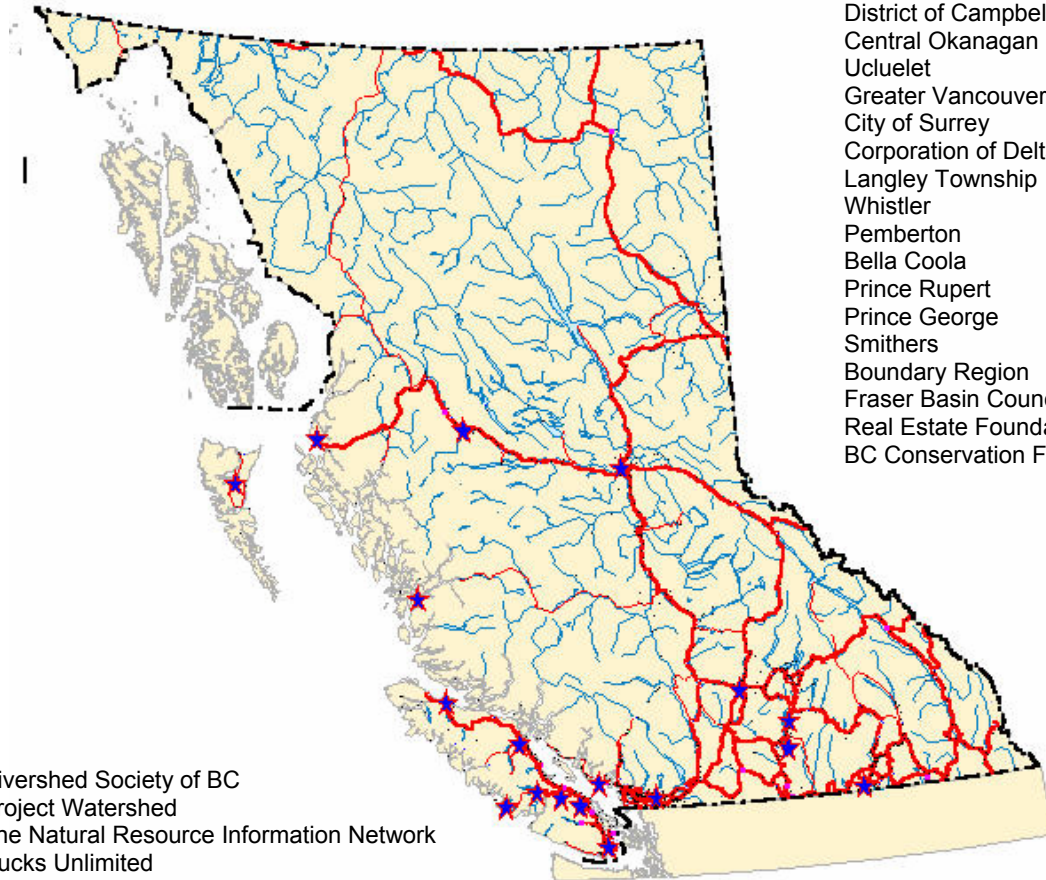
The Community Mapping Network is a not-for-profit organization. Funding for the CMN is on a project specific basis. Generous support has allowed the CMN to maintain a centralized server, and to provide outreach to community groups. The CMN is in need of funding to continue this important work.

## ■ Who are CMN partners?

Many groups and agencies have worked with CMN and mapping initiatives. Although the number of community groups involved with CMN is too lengthy to list (several pages), some of the CMN's community partners who play an ongoing role in the funding, direction and governance of CMN include:

BC Conservation Foundation  
 Inner Coast Natural Resource Centre  
 Greater Vancouver Regional District  
 Fraser Valley Regional District  
 University College of the Fraser Valley

Sunshine Coast Regional District  
 Comox Strathcona Regional District  
 Nanaimo Regional District  
 Alberni-Clayoquot Regional District  
 District of Saanich  
 Cowichan Valley Regional District  
 District of Squamish  
 District of Campbell River  
 Central Okanagan Regional District  
 Ucluelet  
 Greater Vancouver Regional District  
 City of Surrey  
 Corporation of Delta  
 Langley Township  
 Whistler  
 Pemberton  
 Bella Coola  
 Prince Rupert  
 Prince George  
 Smithers  
 Boundary Region  
 Fraser Basin Council  
 Real Estate Foundation of BC  
 BC Conservation Foundation



Rivershed Society of BC  
 Project Watershed  
 The Natural Resource Information Network  
 Ducks Unlimited  
 Federation of BC Naturalists  
 BC Hydro  
 Langley Environmental Partners

## **HOW DOES THE CMN WORK?**

### **The CMN Mandate**

The CMN integrates data from government and non-government sources and makes it accessible through a user-friendly mapping system over the internet.



Integrated natural resource information is necessary to assist communities and local governments with land use planning, to promote conservation and protection of sensitive habitats, and to raise awareness of ecological values. The CMN promotes standard methods of collecting and mapping community information.

#### *Community Mapping Network priorities:*

- Building capacity within communities to collect and manage resource information;
- Developing and maintaining a network of servers to provide internet access to resource information, base maps and imagery;
- Developing common methods and standards for data collection;
- Linking community-based mapping with larger agency databases such as the Canada/BC Fisheries Information Summary Systems (FISS) and the Coastal Resource Information System (CRIS);
- Providing information about watershed management, stream ecology, fish and wildlife habitat and restoration opportunities and promoting active stewardship;
- Creating an open forum for discussing the use and management of natural resources;
- Promoting sustainable planning.

*The CMN extends the capability of most government agencies by integrating community and government natural resource information.*

### **CMN as a partnership**

The CMN is a network of partners made up of community groups, organizations and individuals. A steering committee is responsible for managing the CMN. The steering committee includes representatives from the BC Conservation Foundation, Fisheries and Oceans Canada, Environment Canada (Canadian Wildlife Service), BC Ministry of Water, Land and Air Protection, BC Ministry of Agriculture, Food and Fisheries, local government, and a variety of community groups.

*CMN is cost effective. Shared data is cost savings because it means we are not reinventing the wheel.*



## CMN Data structures

The CMN acts as a data steward insomuch as it makes the information collected and shared available to a wide number of people, in a user-friendly format. At the same time, partner organizations retain their property rights to the data, and can update their own data at any time on the web.

## Scope of CMN

Four types of mapping projects can be accessed through the CMN, including:

- **Community projects:** Projects developed for instance by the Inner Coastal Natural Resource Centre, Comox Valley Project Watershed and Upper Skeena Streamkeepers, and The Georgia Strait Alliance;
- **British Columbia projects:** Sensitive Habitat Inventory and Mapping, BC Wetlands, Wildlife Observations, Coastal Resources, Natural Resources Information Network, Vancouver Island Wildlife Trees, Sensitive Ecosystems Inventory, BC Watersheds, South Coast Cutthroat;
- **National projects:** Stewardship Canada, FrogWatch
- **International projects:** Community Mapping Projects Directory.

## WHERE IS CMN TODAY?

Some of the key activities of CMN include:

- making tools and resources for mapping accessible to communities
- initiating training & field surveys
- providing methods and standards for data collection & processing
- providing knowledge & expertise to communities

Two “hands on” examples of how this works are the Sensitive Habitat Inventory Methods, and the Sensitive Habitat Atlases, both developed by CMN.

*SHIM Is the standard for habitat mapping in urban and rural watersheds in British Columbia.*

### ■ **Sensitive Habitat Inventory Methods for Community Mapping**

Sensitive Habitat Inventory Methods (SHIM) have been developed and promoted by CMN as standards for community mapping. Training and tools have been provided through community organizations to thousands of volunteers who are interested in mapping sensitive habitats.



■ **What are sensitive habitats?**

Sensitive habitats are urban and small rural watercourses, eelgrass beds, riparian areas and wetlands that are often they are not mapped and suffer from impacts of human development.

■ **How does SHIM methodology help sensitive habitat mapping?**

- Helps reduce government time spent on habitat referrals and development applications
- Develops skills within communities for collecting and managing information
- Helps create awareness of the value of sensitive habitats
- Facilitates regulation and enforcement, as well as research and habitat restoration.



*Field methods for SHIM Mapping, Langley Community Partners Society*



■ **Some figures for mapping completed by CMN:**

<b>To date</b>	<b>Totals</b>
SHIM features mapped using a GPS unit in the field	28,879
SHIM streams mapped using a GPS unit in the field	226
Photos taken during data collection	5,065
Wildlife trees currently mapped	3,310
Productivity records associated to these trees	6,795
Wildlife observations	826
Frog observations	9,541
Eelgrass mapping projects	22
Sensitive Habitat Atlases	33
Currently active CMN partner organizations	35
Communities working with/collecting CMN data	32

**■ Sensitive Habitat Atlases**

**REGIONAL HABITAT  
ATLASES NOW  
AVAILABLE:**

- Squamish Lillooet*
- Vancouver Island*
- Sunshine Coast Fraser*
- Valley Comox Strathcona*
- Nanaimo*
- Alberni-Clayoquot District of*
- Saanich*
- Cowichan Valley*
- Campbell River*
- Ucluelet*

Local habitat inventory and mapping projects have been undertaken throughout B.C. and many more are currently underway. Local resource atlases, customized for use by local government planners and developers, have been used to support Local Resource Management Plans, Official Community Plans, and Watershed Management Plans in a number of B.C. regional districts. A Sensitive Habitat Atlas consists of several map layers, including up-to-date aerial photographs, property boundaries, land parcels and road networks, all overlaid with sensitive habitat information.

The first generation of Sensitive Habitat Atlases were compiled in the 1990s for the Comox-Strathcona Regional District, Nanaimo, Squamish and Saanich Regional Districts. Recent additions include the Sunshine Coast Habitat Atlas, the Fraser Valley Regional District Atlas and the new Sea to Sky Atlas, published in 2004.

Printed versions of the Atlases are available at public libraries and local government offices. Online versions, which are continually updated, are available on the Community Mapping Network website at [www.shim.bc.ca](http://www.shim.bc.ca).



**■ Other projects**

A detailed description of all projects that are available on CMN is available on the SHIM website. On the website, it outlines the project's goals, methods, and status. Contact information for the organization(s) responsible for each project is also provided, and interested viewers are encouraged to contact the organization to ask questions or find out how they can get involved.

Among others, inventory and mapping projects currently accessible through the Community Mapping Network include:

B.C. Wetlands Atlas	Sensitive Ecosystems Inventory	Watersheds B.C. Atlas
Frogwatch Sighting Mapping Tool	Inner Coast Natural Resource Centre Stream Observation Mapping Tool	South Coast Cutthroat Atlas
Sensitive Habitat Atlases		Wild, Threatened, Endangered and Lost Streams of the Lower Fraser Valley
Bald Eagle & Heron Atlas	Sensitive Habitat Inventory and Mapping Project (SHIM)	Community Mapping Network Directory
Wildlife Observations Mapping Tool	Pacific Coastal Resources Atlas	

## ***FUTURE DIRECTIONS FOR THE CMN***

*Pooling resources and expertise creates efficiencies.*



Data from the Community Mapping Network has been and will continue to be used for land use planning purposes as well as a vehicle for empowering community conservation and stewardship of natural resources.

Many small streams and watercourses in British Columbia are not delineated on provincial or federal topographic maps and databases. In addition, the locations of key species, including endangered species, are unknown. Local cadastral and planning information can often be dated. As a result, many planning and development decisions continue to be made in the absence of critical information. Good land use planning requires accurate, and up-to-date spatial habitat information. The CMN will continue to improve land use planning processes by providing data for fish and wildlife habitat restoration and enhancement.

### **Next steps**

More data needs to be collected, and to do this there is a need to facilitate local stewardship efforts and expand the volunteer base. In addition, the information must now be managed; this is the ongoing job of CMN.

CMN ongoing role is to make information available to the widest number of people by:

- Developing new tools for sharing and capturing data
- Developing common methodologies and standards
- Providing training for community users
- Providing a forum for collaboration
- Providing the security and integrity of data provided to CMN

# FEEDBACK ON CMN FROM COMMUNITIES

## ■ *What do planners say about CMN?*

### ***Brent Magnan, Habitat Technician, Regional District Central Okanagan***

For over three years, we have been mapping our sensitive aquatic habitats using the SHIM methodology. The sensitive areas that we have identified are being incorporated into our Official Community Plans as environmentally sensitive development permit areas. The CMN helped us initiate the project by providing direction, guidance and training to staff which has helped us achieve our goals in environmental protection. The CMN has made substantial contributions in terms of resources, equipment and staff time. They have also supported us in hosting a local workshop on Planning Sustainable Communities. Much of what we have accomplished has been a result of the support from the CMN.

Our data is currently housed in house, as well as on the CMN, and we are constantly generating new data. Our latest project is the Okanagan Lake foreshore inventory and mapping project. The lakeshore inventory mapping methodology has been developed over the last three years in collaboration with the CMN. The baseline information provided by the project will help us with future foreshore initiatives and strategies. The Okanagan is one of the fastest growing areas in British Columbia. Several other local municipalities have shown interest in the work we have been doing and will hopefully initiate mapping projects similar to ours. To do that, more training will be required.

To date, the Real Estate Foundation has provided us funding on three different mapping projects, including getting our data online through the CMN. The work we've been doing is being used on a daily basis by Regional District staff, developers and consultants alike. It has proved to be a baseline tool for any application that we encounter..

### ***Cheryl Trent, Sunshine Coast Regional District***

The Habitat Atlas is used frequently and the data is being updated on a regular basis. The Sunshine Coast Regional District has been very involved in SHIM mapping for several years now. At the SHIM mapping workshops, there was an excellent turnout and participants showed a high level of energy and enthusiasm. Lots of positive feedback was received during and after the workshop and the turnout of volunteers for the SHIM survey was even better than expected. We would like to see more of these workshops, as they are crucial to developing capacity in our community.

The data from the SHIM surveys was put online by CMN. The Habitat Atlas is available on the front counter in our office, and on the Community Mapping (CMN) website. This ensures that anyone interested in land use planning and stewardship has access to the SHIM information that is so crucial for the conservation and protection of habitats.

**Lori Wilson, Alberni-Clayoquot Regional District**

We use the data that is on CMN on a daily basis and we welcome CMN outreach activities here in the Alberni-Clayoquot Regional District. There are only a few people certified to map in the ACRD, and we need more mapping data, more ortho-photos and more satellite imagery in order to accurately represent our area. In the past three years, we've made a good start, we've had support from CMN, and now have baseline data available. Having data available at appropriate scales for planning is very important, and CMN provides us with data we need in an appropriate context. CMN is a good example of a partnership that works to provide us services we need at this level of planning. We are increasingly partnering with industry and First Nations to get the data we need, and putting this information into our habitat Atlas so that it is available on the CMN website. In the future, we would like to partner with CMN to develop more collaborative decision support systems, and to help us plan for emergency response.

**Deb Sargent, Comox-Strathcona Regional District**

The Habitat Atlas is integral to our environmentally sensitive area development permit process. We have a copy of the sensitive habitat atlas on our front counter. It is used on a daily basis as a reference tool for our planning staff and property owners. The atlas provides a common base for planning staff to share with property owners as an entry into discussions regarding the process for obtaining development permit approval as a condition for property development.

**Heather Beresford, Municipality of Whistler**

The Sea to Sky HA is another tool in our toolbox to assist with land use planning, particularly along sensitive streams. As staff and stewardship group members become more familiar with the resource, it is being used more. There is a strong link between better natural resource information and communities making better land use decisions. The Sea to Sky HA is another tool in our toolbox to assist with land use planning and conservation efforts, particularly along sensitive streams in Whistler. Our planners and stewardship group members increasingly use the SHIM data to assess building and development permits, for municipal operations, enhancement and restoration opportunities, wildlife conflicts, growth planning and recreation management. SHIM mapping and inventory of priority streams in Whistler has filled important information gaps in our knowledge and has provided another source of information for sustainable planning.





*Realtors and developers want certainty and clarity; they want to know exactly what is required, and with the Habitat Atlas, they can look online to see what is on their properties.*

*The FVRD Habitat Atlas is now a standard part of development review process.*

*When community groups see the data, they get blown away at how much information is there.*

**Graham Daneluz, Planner, Fraser Valley Regional District:**

Flooding and geotechnical hazards are big concerns our area. Shim mapping is very useful for collecting hydraulic and habitat data. SHIM inventories were used as a first step in watershed planning in Hatzic Valley. The data was used in a number of ways. For example, both hydraulic and habitat data was useful in the design and permitting of in-stream sediment traps.

CMN have come out to community meetings, in Hatzic and the Chilliwack River Valley for example, to demonstrate the web page to local groups. They actually, on the spot, uploaded wildlife observations made by community members to the web site. They showed community groups how to utilize the online mapping themselves.

CMN has also helped us develop the data we needed for planning. As a planner, I find there just isn't the level of data that needed to make site-specific decisions, and SHIM is a good step in that direction. Especially in watersheds where there are lots of problems. SHIM is very flexible so it can be used for a variety of different needs and to collect geo-referenced data at varying degrees of detail.

For instance, the Habitat Atlas provides the basis to make decisions on stream buffer regulations. The province told us we must apply the stream protection regulations for fish protection. The legislation has been in place for some time now, and the best way to for us to apply it in the FVRD is through development permit areas.

Realtors and developers want certainty and clarity; they want to know exactly what is required, and with the Habitat Atlas, they can look online to see what is on their properties. A savvy landowner, realtor or developers can look online to see how the regulations will affect them, and from this, they will be able to predict what kind of buffers are required on their property.

The Habitat Atlas is used as source data when assessing development proposals. In this sense, the FVRD Habitat Atlas is now a standard part of development review process, and now the Habitat Atlas is being used in Official Community Plans (OCPs).

It will be great when realtors start using this. Maybe CMN can provide some more outreach programs for them. When community groups see the data, they get blown away at how much information is there.

## ■ What do educators say about CMN?

### **Roy Jantzen, Wilderness Leadership and Aboriginal Tourism Program Manager, Capilano College:**

*The presentation by CMN created a sense of awareness and a feeling of stewardship that our students take back to the community.*

The students in the Aboriginal Tourism Program are from the Musqueam, Squamish and Mt. Currie Nations. They really appreciated seeing mapping in their traditional territories. Many had never looked at bioregional mapping before, and the fact that it was visually accessible and available online made it all the more empowering. Some students were looking at the mapping from a cultural perspective, some of them from a scientific perspective, but overall, the presentation by CMN created a sense of awareness and a feeling of stewardship that our students take back to the community. The instruction this spring was excellent, and very participatory because the students could sit at the computer and engage with the concepts. Hopefully in the future we can do some more training, and find ways for these students to apply the concepts they learned in the field.

## ■ What do community stewardship groups say about CMN?

### **Rod Palm, Strawberry Isle Research Society, Tofino:**

*Now that we've mapped the eelgrass sites, the oyster growers make sure they don't drive their boats over these sensitive habitats... because they know how important it is.*



Our data is up on the Community Mapping Network site and in the Pacific Coastal Resources Atlas, and we're going to be adding more data soon. We plan to put more stuff on the web over the winter.

Most of our time is spent out in the field. We needed to have eelgrass locations that are monitored annually. So we took the whole grade seven class out there to do chute density and leaf indexing. The students and the teachers loved it. We rely on volunteers to do our monitoring, and the co-op donated the yardsticks, and local welder donated the quadrats, and then we went out there and did the work. Last week, we took the Nature Trust BC out and got them mapping too, and those students loved it too. Next week we've got students from Young Canada works coming out to do mapping with us. I've got four broken ribs right now, and we were still out mapping last week on the mud flats, and we're going out again on Monday. We now have annual monitoring sites.

The eelgrass is so important for the salmon runs, and to the oyster growers too. Now that we've mapped the eelgrass sites, the oyster growers make sure they don't drive their boats over these sensitive habitats. They go around the eelgrass, because we've mapped it and they know how important it is.

*CMN is a real service to community organizations like ours.*

***Edith Tobe, Squamish Stewardship Society:***

Squamish is a fast-growing community. Housing, industry and road development are all happening here, and the new Atlas will provide us with the information we need for planning. CMN is a real service to community organizations like ours. We are looking forward to the fact that the data in this Atlas may be incorporated into our Official Community Plan... if it did, this would be a huge step forward for Squamish, We are very excited, as this Atlas will promote a socially, environmentally and economically healthy approach to planning, and the data we have worked so hard to compile will be a legacy for the 2010 Olympic Games.”

***Dan Buffett, Ducks Unlimited:***

CMN services, especially the habitat atlases, have been very useful here at Ducks Unlimited when we need to enquire about property securement. When we want to buy land, or create agreements with land holders, we consult the Habitat Atlases as they are a good source of information on many land-use features including habitat, basemaps, and imagery.

We are now completing a conservation database atlas in conjunction with several agencies (Canadian Wildlife Service, Prov of BC, The Nature Trust of BC, Nature Conservancy of BC. Based on discussion with staff at CMN, we are proposing for CMN to host the MS Access database which will provide a central clearing house to update the attributes of conservation properties that we can use for the data. This service is unique and greatly reduces our administration costs for data management.

We have been very pleased with the services CMN provides, including their outreach training, and look forward to working with them on future joint projects.

## ***Governance of CMN***

Community Mapping Network has established a Charter which defines the governance structure of the CMN and the activities undertaken by its partner organizations. A steering committee exists, and within the charter framework, each of the Charter Organizations can be represented on the steering committee. The steering committee is responsible for setting the short and long term priorities and objectives of the CMN.

## Contact CMN

If you would like to receive more information about a project, or would like to let us know about a key natural resource database that you would like to access through the CMN, or arrange a training or awareness workshop, please contact one of the following people:

**Brad Mason**

Project Coordinator  
Fisheries and Oceans Canada  
Habitat and Enhancement Branch  
401 Burrard St.  
Vancouver, BC  
V6B 5G3  
Tel: (604) 666-7015  
E-mail: [masonb@dfo-mpo.gc.ca](mailto:masonb@dfo-mpo.gc.ca)

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