

*DRAFT, May 2007*  
**WCVI Information System Strategic Plan**

## **1. Introduction**

This strategic plan provides a vision and steps to move forward for the continued development of the WCVI Information System ([www.westcoastaquatic.ca/RIS.htm](http://www.westcoastaquatic.ca/RIS.htm)). The WCVI Information System has reached a point where there is a need to review what it has done and what other similar initiatives exist, and to engage with Provincial, Federal, First Nations staff, NGOs and stakeholders to get feedback for future directions. This includes understanding what other parties are doing and where they intend to go, what users want, what opportunities exist, outlining our current work and future plans, and then defining our role and associated tasks. The goal is to ensure that continued development is grounded in the capacity and experience of the partners, and the needs of the end user. The strategic plan will be used to produce a business plan that will ensure long-term viability.

This strategic plan will help us work towards our longer-term goal of building a useful information resource. The strategic plan focuses on the key roles of Data Collection, Data Organization and Management, and Data Use.

## **2. Vision**

The WCVI Information System is a dynamic web information meeting place for people to discover, exchange, and contribute local, traditional and scientific information about the WCVI communities, ecosystems, resources and issues. The purpose is to support and inspire decisions and activities that result in prosperous communities and ecosystems in the WCVI region.

### **2.1 Mission**

*To increase access to information about communities, ecosystems, resources and their use and health within the West coast of Vancouver Island (WCVI) / Nuu-chah-nulth Territory.*

### **2.2 Values**

An information sharing environment that is user-friendly, user-driven, accessible, neutral, cost-effective, dynamic, and inclusive of different types of knowledge.

### **2.3 Goals**

The WCVI Information System supports goals, objectives and initiatives of the AMB, Uu-a-thluk and Clayoquot Biosphere Trust, which include:

- ✓ Enable an ecosystem approach to management (e.g., cumulative impacts; aggregate geographic or economic health).
- ✓ Enable persons and bodies affected by WCVI aquatic resource management to make better decisions, resulting in more prosperous resources and communities.
- ✓ Increased First Nations and local communities capacity to manage aquatic resources
- ✓ Increased First Nations and local communities access and benefit from aquatic resources, while producing benefits for all Canadians
- ✓ Improve management of aquatic resources in the WCVI region
- ✓ Create a common sense of community (common identity) amongst: those using resources, managing resources, and people in the area.
- ✓ Enable integration between sectors, agencies, disciplines, and subjects.
- ✓ Enable people to participate more fully in resource management

- ✓ Enable community based research and projects

**Strategic Goals of the WCVI Information System are:**

- to provide one access point for information about the communities, resources and issues in the WCVI region that will support decisions
- to create an engaging web environment to learn and exchange information about the communities, ecosystems, resources and issues of the WCVI region;
- to enable local information to be used in decision-making;
- to provide a platform to gather and manage traditional ecological and local knowledge on issues and resources;
- to integrate local knowledge with other knowledge to support learning and dialogue about the resources and communities;
- to discover and learn about users opportunities or interests;
- enable and communicate about research and projects in the WCVI region;
- long-term stability of the WCVI Information System.

### 3. Where We Are Now

The WCVI Information System is a collaborative initiative of the WCVI Aquatic Management Board, the Clayoquot Biosphere Trust, and Uu-a-thluk. The WCVI Information System is part of the AMB westcoastaquatic web site, which is designed to present a variety of information (stories, news articles, photographs, webcam) about the WCVI region. The information is organized based on sectors and geography. As part of this larger system, the WCVI Information System is made up of four main parts:

- 1) Web Atlas
- 2) Documents Database
- 3) Projects and Research Directory
- 4) Wildlife Sightings Database

The target audiences of the WCVI Information System are identified as:

- aboriginal and non-aboriginal resource users.
- coastal communities of the West coast of Vancouver Island and those who visit the WCVI area.
- aquatic resource managers (and contractors) from Federal, Provincial, Local and First Nations governments.
- research organizations, academics and interest groups

#### 3.1 Key Roles of the WCVI Information System

Activities and the current state of the WCVI Information System is documented under data collection, data organization and management, and data use.

##### 3.1.1 Data Collection

Currently each member organization collects data through their operations, projects and partners.

##### 3.1.2 Data Organization and Management

Current internal activities:

- CBT maintains an in-house library in Ucluelet, has a couple of collections from now defunct organizations, and supports data collection through project funding and other partnerships.
- Uu-a-thluk is collecting documents and information for litigation, projects and other activities.
- AMB collects and produces documents associated with projects and its operations

## *The WCVI Information System*

### **3.1.2.1 The Web Atlas**

The Web Atlas currently has approximately 100 map layers. The Web Atlas is hosted by the BC Community Mapping Network (CMN), and some of the data now on the system is accessed through them. We have also collected some layers from government agencies and others to post on the site, with permission. The web atlas is managed internally.

The BC Community Mapping Network is currently working on moving their atlases into a new open source software program by MapGuide, AutoDesk (Mapguide Opensource). The purpose of this move is to increase the interoperability of the system through the use of Open GIS Consortium (OGC) WMS and WMF compliant standards. The CMN is also in the early stages of developing data digitizing tools for this new software.

#### **Similar Initiatives**

<b>Name</b>	<b>Who</b>	<b>Types of Spatial Data</b>	<b>Plans</b>
Coastal Resources Information Management System (CRIMS)  (web atlas)	Integrated Land Management Bureau, BC Provincial Government (government produced data)	Aquaculture Bird Habitat Commercial Fisheries Recreational Fisheries Other Fisheries Marine Ecosystem Classification Marine Mammals Marine Plants Offshore Oil and Gas Human Use (planned)	have established a plan for data warehousing a range of provincial data, data access, and data presentation via the web atlas
Mapster (provincial)  (web atlas)	DFO (government produced data)	administrative boundaries DFO Pacific Region Facilities Planning Projects Habitat Projects Marine Resources (local knowledge, scientific, commercial) watershed boundaries BC Fish Bearing Streams BC Fish Species Range BC Land Cover Yukon FISS points Orthophotos CHS Charts Satellite Imagery BC and Yukon Base maps	web atlas on-line. DFO is continuing to work on its strategy for data organization (developing a 5 year plan)
FISS (Fisheries Information Summary System) – not map based. Maps shown on Mapster  (FISS data are shown by stream in the WCVI Atlas provided by a tool developed by CMN)	DFO and BC Province	escapement information salmon presence obstructions	on-going

COINPACIFIC (includes a web atlas)	Federal and Provincial initiative	limited data – pulls from HEB	
PacMara	NGO	interested in analysis of marine issues (name of program). Will need to collect and organize data to do this analysis.	
The Atlas of Canada	NRCAN	range of base information at smaller scales	on-going

### **3.1.2.2 Documents Database and Projects & Research Directory**

The database holds meta-data about documents, and research and projects. The database is located on the westcoastaquatic.ca ISP server. The database is designed to handle an assortment of grey literature, including newspaper articles, and unpublished and published reports. Meta-data standards of FGDC and Dublin Core were consulted in selecting what information to describe the documents. There are approximately 200 documents in the database, and is growing. Where permission is available, documents can be uploaded for distribution. Documents can be spatially referenced, via the web atlas, to streams, watersheds, sounds or marine areas (also viewed from the atlas).

The database is open to the public and can be searched via the westcoastaquatic website. It has 4 levels of access for entering in documents: public, information gatherers, administrator, super-administrator. If a public enters a document, it is queued before being shown to ensure appropriate information has been entered.

#### **Similar Initiatives**

<b>Name</b>	<b>Who</b>	<b>Data</b>	<b>Plans</b>
EcoCat: Ecological Report Catalogue (on-line)	BC Ministry of Environment	reports (check the scope). Fisheries and watershed related documents.  Made available for download where available	on-going
Fisheries Project Registry	DFO and BC Ministry of Environment (participating agencies: DFO; Government of BC; BC Hydro; Forest Investment Account; Habitat Conservation Trust Fund; Habitat Stewardship Program; Pacific Salmon Commission; Pacific Salmon Foundation; Pacific Streamkeepers Federation; BC Coastal Fish and Wildlife Compensation)	Project names, date, descriptions and contacts.  Can select by watershed or stream (from a map) or by search box.	on-going
libraries	Bamfield Marine Science Centre and other Academic	reports, books, research	on-going

	Libraries		
Pacific Biological Station library	DFO	reports, scientific papers	on-going
The Continental and Oceanographic Data Information System (CODIS) soon to be on-line	DFO and Environment Canada		

**Challenges experienced:**

Populating the documents database requires people to enter the documents.

**3.1.2.3. Wildlife Sightings Database**

The wildlife sightings database was established by the CBT as part of a masters research project on cougars, which was being conducted as part of the larger Wild Coast Project, initiated by the Pacific Rim National Park Reserve. The researcher was interested in including local information about cougar sightings. This sightings database was created as part of the web atlas. The data are managed by the CBT, and stored on the BC CMN server. The sightings database was not sufficiently promoted, and as such has not been well used yet (moreover, cougars are not that commonly viewed compared to other species).

**Other Similar Initiatives**

Name	Who	Data	Plans
Wildlife Sightings Database  (not on-line)	Pacific Rim National Park Reserve	Sightings of wildlife recorded by Park Wardens and those called in by visitors and residents. Observations are verified and/or quality checked by a Park Staff.  Recordings are for the Park area, and may extend outside	continue to populate, maintain and use (MS Access database)
marine mammal sightings (not on-line, but willing to share data)	Strawberry Island Research, Tofino	sightings of marine mammals called in by whale-watchers and other marine users (e.g., water taxi)	on-going
marine mammal sightings	Bamfield Marine Science Centre	sea otter sightings (by form from web)	on-going
Frog Watch Sightings	BC Provincial Government, hosted by the BC Community Mapping Network	amphibian sightings	on-going
Wildlife Observations Mapping Tool	Langely Environmental Partners and the Township of Langley, hosted by the BC Community Mapping Network	range of wildlife (geographic scope uncertain)	on-going

### 3.1.3 Data Use

The WCVI Information System provides the user with the ability to view (zoom in and out) and overlay maps, search for documents and projects, and to enter their own wildlife (cougar) sightings database.

Other initiatives are listed above and provide similar use experiences, with a focus on different information sources. There are currently a range of ‘tools’ being developed that enable users to utilize and view data in a variety of ways. While some of these tools are commercial or require technical expertise, there is a trend towards increased public availability and usability.

## 3.2 SWOT Analysis for the WCVI Information System

<b>Strengths</b>	<ul style="list-style-type: none"> <li>• demonstrates leadership and vision in aquatic resource management</li> <li>• organizations can influence management practices through increased access to information</li> <li>• partnership between three organizations to share ownership and costs</li> <li>• working relationships with Provincial and Federal Governments for data sharing</li> <li>• all organizations have strong community roots</li> <li>• <a href="http://www.westcoastaquatic.ca">www.westcoastaquatic.ca</a> provides a wide ‘catchment’ to bring people to the RIS</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• need for greater clarity from target audiences on how they want to use the information</li> <li>• need for greater connection with other systems and ‘data owners’</li> <li>• limited human and financial resources within the organizations</li> <li>• large physical area to cover, with many different sectors, species, communities, etc.</li> <li>• requires more communication and engagement of target audiences</li> <li>• limited technical expertise on some topics</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• show leadership in collaborative ecosystem management</li> <li>• existing systems are not integrated and not organized on an ecosystem-basis</li> <li>• potential to work with other groups to collect, store and manage data</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>• not able to access data from key data holders via the web</li> <li>• rapidly changing technical environment -- keeping apace and relevant</li> <li>• people don’t know that it exists or use it enough to justify its existence and support its costs</li> <li>• lack of will to share data</li> </ul>

## 4. Future Activities and Directions

Review of current similar initiatives and feedback from discussions indicates that the WCVI Information System can fill several gaps:

- integrate information on a geographic basis so that users can easily find all information about an area regardless of who owns that data or where it is physically stored.
- a place to organize and store data produced in and about the region, not already captured in existing systems;
- a place to capture, organize and store local and traditional knowledge;
- a place to capture, organize, store and present information about regional projects and research (other than those in the Fisheries Project Registry);
- a place to capture, organize, store and present information about regional documents;

- a space where First Nations can publicly share information they would like to;
- provide ground-truthing and leadership to other coastal management areas regarding information management.

The user surveys and meetings also show that users have a keen interest in:

- information about the health of resources, harvest levels (commercial, recreational), trends over time, changes in resources over time (e.g., abundance, location);
- want to see summarized data, with the ability to drill down and view the raw data;
- ortho-photographs, forest cover, salmon streams (stock status, current and historical) were often mentioned map layers of interest;
- the ability to interact with information was identified as being important to users;
- maps were selected as the information format of most interest or use, followed by aerial photographs and satellite images, and then statistical data.
- in response to ranking how users would like information available: 1) databases that I can search and get or locate information; 2) maps that I can overlay and interact with; 3) models and tools that allow me to ask questions; 4) “Ask an Expert” forum; 5) a “score-card” showing key indicators; and 6) web broadcasts of people presenting information. (range of average responses: 2.83-4.2, with closest to 1 being most desirable)

To date the strategy for organizing data, particularly maps, has been to collect as much as possible. To provide more focus for data collection and information needs there is a need to:

- focus data collection on projects and key community, resource and management issues.
- make the information accessible, interesting and relevant to more people by bringing together the maps and documents database, with other content on issues.
- develop “west coast stories” to show various perspectives, and to present local, traditional and scientific knowledge on issues and resources.
- create more opportunities for local people to contribute their information in a variety of ways.
- provide analytical tools to allow for asking of questions

## **4.1 Strategies for Moving Forward**

### **4.1.1 Renew the Collaborative Working Agreement for the WCVI Information System**

**Outcomes:** Continued support, clear identification of roles and responsibilities, and maintenance of a good working relationship among the partner organizations.

#### **Activities**

- complete the business plan
- review and, if necessary, revise the internal communications pathways
- identify roles and responsibilities of the participating organizations (ie, how to work together)
- outline implementation of a financial plan
- review protocol/agreements on how to work with other organizations
- strategically identify other partnerships that will enhance the WCVI Information System (to build capacity and not compete).

#### **Resources Required**

- funding to complete business plan (already obtained)(lead: AMB, short-term)
- key staff from each organization to meet to review documents, discuss and make any revisions (lead: ALL, short to long-term)
- each organization to write into workplans the roles, responsibilities and time allocations for any staff involvement (lead: ALL, short to medium-term)

## **4.1.2 Data Collection**

**Outcomes:** Increased geo-referenced data about WCVI communities and resources.

**Activities:** Each organization continues to collect data as they have, with a focus on projects and operations. In the general, the partners need to promote information being geo-referenced by other data collectors so that it can be accessed on a geographic as well as subject basis.

**Resources Required:**

- project identification, funding and management (lead: internally within each organization, partnerships where beneficial, long-term)

## **4.1.3 Data Organization and Management**

### **4.1.3.1 Web Atlas**

The web atlas was identified as a valuable information service for the WCVI Information System.

**Outcomes:** increased number of map layers in the web atlas

**Strategy:**

- a) Facilitate access to federal and provincial spatial data (and others where applicable) using the technology of web atlases to dynamically bring it directly into the WCVI atlas (i.e., data are stored and managed by the agency)
- b) Continue to store and manage relevant spatial data from regional organizations who do not have the capacity to develop their own web atlases (i.e., data are stored on the CMN server and managed by the WCVI Information System).

**Activities:**

- continue to manage the WCVI web atlas internally
- work with the BC Community Mapping Network and other agencies to ensure interoperability of the web atlas using accepted standards (e.g. CGDI adopted standards);
- move the web atlas into the new software version (to increase interoperability and user-friendliness);
- improve meta-data for data in the web atlas, using accepted CGDI standards;
- continue discussions with the Federal and Provincial governments to make identified spatial datasets available to the web atlas.
- work with government agencies and/or other agencies for organizing and presenting dynamic datasets.

**Resources Required:**

- funds to contract a person to move the web atlas into the new software(lead: AMB, short-term)
- person(s) to continue discussions with Federal and Provincial governments around data sharing (lead: AMB, medium to long term)
- person to manage the web atlas and relationships around data sharing and management (lead: AMB , long-term)

### **4.1.3.2 Documents Database**

The documents database, and project and research directory were both identified in the survey of having a valuable role in the WCVI Information System.

**Outcomes:** storage and management of documents and projects for the region.

**Activities:**

- a. The member organizations will continue to enter their own documents and projects into the database, as well as manage the database.
- b. The member organizations will encourage the development of a provincial marine documents database, which the WCVI database can be linked into.
  - further review and keep informed of other initiatives, and strategically encourage discussions

**Resources Required:**

- staff and hired persons (e.g., interns) to find and enter documents and projects into the database (lead: ALL, long-term)
- person or staff to further review other initiatives, encourage discussions around the development of a provincial marine documents database (lead: AMB, long-term)
- person to manage the database (lead: AMB, long-term)

**4.1.3.3 Wildlife Sightings Database (Local Knowledge Collection Tool)**

Collection of local information and knowledge about resources, including wildlife sightings, has been identified as an important role for the WCVI Information System. Wildlife sightings are currently being documented by a few organizations, as listed above, but this information is not being stored in a central place.

Prior to committing additional resources, however, it is necessary to confirm if people would actually contribute data through the tool, and how the data will be quality checked, used and made available to the public and decision-makers. Sufficient interest was expressed in the wildlife sightings database during conversations to warrant this next step, particularly in Clayoquot Sound.

**Outcome:** Determine feasibility of proceeding with application of this tool and decide whether and how to implement.

**Activities:**

- a. Hold discussions with other groups collecting wildlife sightings to explore if it makes sense and if there is a desire to collaborate efforts and use the web atlas tool
  - hold more discussions with key groups and individuals already involved in collecting wildlife sightings to identify if there is sufficient interest and commitment to continue to maintain the tool.
  - if there is sufficient interest, then explore data collection, sharing, use, quality checking/verification, management, and ways to present back to the public. Also identify resources available to assist manage the database (volunteer/ in-kind time, verifying sightings, financial, technical etc). If there is not sufficient interest, then retire the tool for the time being.
  - suggested idea was promoting it more as a *Naturalist Notebook*, where the user can store their own sighting information, and then all the data can be aggregated and used for planning (e.g., hot spot mapping) and to counter misinformation. Would need to expand the list of species and engage local naturalists as to what features would attract them.

**Resources Required:**

Person to coordinate meeting and facilitate discussions to identify if and how to move forward, outlining roles and responsibilities, developing a plan and budget (lead: CBT, short term, with potential for long term if the tool is maintained)

## **4.1.4 Data Use**

### **4.1.4.1 Enhance Communication about the Region, Issues and Trends**

**Outcomes:** Enhanced communication of projects, key issues and trends in the WCVI region by presenting information in more engaging, user-friendly, and user-driven ways.

**Activities:** Use internal resources to the member organization to develop information around projects, issues and trends for the web, as well as provide opportunities for other individuals and groups to contribute relevant information. Focus more on telling “west coast stories”.

- identify projects and issues on which to focus information gathering and story development to place on the web (e.g., herring, bottom trawling, sea otters, aquatic resource health and trends, wild salmon policy implementation; indicators projects);
- develop more interaction among the parts of the WCVI Information System (e.g., web atlas, documents database) with the larger web site to present engaging and user-friendly information and stories (e.g., information about herring can be linked to maps in the web atlas and documents and projects in the database, as well as photographs, statistics etc.);
- watch for strategic opportunities where local people want to contribute their information and stories in a way that contributes to the site and requires minimal management (e.g., blogs, articles);
- identify strategic opportunities to incorporate user-driven analytical capabilities (e.g., new tools, partnerships)

**Resources Required:**

- person(s) to develop content and web development (lead: ALL, long-term)
- person for web development (lead: AMB, long-term)

### **4.1.4.2 Promote the WCVI Information System and provide for Continuous Feedback**

**Outcomes:** Increased use of the WCVI Information System

**Activities**

- e-newsletter that highlights new features and information
- articles in regional newspapers, Uu-a-thluk newsletter and First Nations Band bulletins
- promote at relevant events (e.g., meetings, regional conferences etc)
- enhance internal promotion and championing of the system
- maintain a feedback form on the site
- polls to ask questions and get feedback

**Resources Required:**

- person to write articles, newsletter, provide support to users (lead: AMB, long-term)

## 5. Summary

This strategic plan for the WCVI Information system focuses on three main areas for continued development over the next 2-3 years:

1. Access to Information
  - a. Facilitate access to information from existing systems by linking to them and promoting sharing protocols (e.g., web atlases, documents databases, statistics)
  - b. Promote information being geo-referenced by other data collectors so that it can be accessed on a geographic as well as subject basis.
  - c. Continue to organize and manage relevant information that is locally produced about the region and is not available on an existing system, especially local and traditional knowledge and culture.
2. Enhance Communication about the Region, Issues and Trends and User Interaction
  - a. Focus organization of information around selected projects, issues and trends, describing it in integrated 'story' formats.
  - b. Better connect the various parts of the WCVI Information System with the larger [www.westcoastaquatic.ca](http://www.westcoastaquatic.ca) site to help communicate information and contribute to the unique WCVI identity.
  - c. Facilitate strategic opportunities for people to engage more with the system to contribute information, stories, and culture.
  - d. Bring tools to the site that allow users to interact more with information (viewing/analysis/contribution).
3. Promotion of the WCVI Information System
  - a. increase awareness of the system to increase its use
  - b. provide ways to obtain continuous feedback and monitor its use
4. Continued Development of WCVI Information System Partnership
  - a. Continued discussion re roles and responsibilities, cost sharing, support.
  - b. Discuss other strategic partnerships.
  - c. Business plan development and implementation to ensure long-term viability.