



New data management tool for endangered species and ecosystems

by Elizabeth Rogers, BC Conservation Data Centre

Finding information about British Columbia's endangered species and ecosystems is much easier now, thanks to two new Internet applications developed by the British Columbia Conservation Data Centre (CDC). Based on a state-of-the-art database management system called Biotics 4, the applications, entitled "BC Species and Ecosystems Explorer" and the "Terrestrial Information Map Service," make the CDC's comprehensive data set on biodiversity in British Columbia widely available to the public.

The BC Species and Ecosystems Explorer application generates lists of provincial species, including all vertebrates, butterflies, dragonflies and damselflies, vascular plants, mosses, and natural plant communities. By selecting a species or plant community, users are linked to information about the conservation status (risk of going extinct) and provincial distribution of the species or natural plant community, as well as a comprehensive Web-based bibliography. Lists generated by the BC Species and Ecosystems Explorer can be re-created in a printer-ready format or downloaded to a Microsoft® Excel file, allowing further analysis.

Each year the CDC tries to improve the application based on user feedback. In the newest version, planned for release in March 2005, users will be able to generate lists of plant communities and species by forest district, biogeoclimatic zone, and habitat type. Non-marine mollusks will be added to the database, as well as legal designation under the federal *Species at Risk Act* and the provincial *Wildlife Act*. The new version will also be the standard for reporting provincial standard names and Resource Inventory Standards Committee (RISC) species codes.

The Terrestrial Information Map Service application allows users to view mapped known locations of species and natural plant communities at risk, and to read data recorded about each location, including the following: directions, a description of the location, a rank indicating the probability that the species or natural plant community will persist at the location, and the date of most recent observation. Locations considered sensitive to human disturbance, such as raptor nests, and bat and snake hibernacula, are made available in a separate spatial layer that masks the exact location by randomizing it within a 5 km buffer.


Prior to launching the Map Service in August 2004, the CDC replied to over 1,000 requests a year for known location information. Now anyone with an Internet browser can open the map, zoom in to an area of interest, and see what species and natural plant communities are known to exist there. The application will generate a PDF map and PDF reports summarizing the data. This has meant a significant reduction in data requests.

Both of these Internet applications are built on an incredibly powerful data-tracking system called Biotics 4. Released in November 2002, Biotics 4 was developed by the non-profit organization, NatureServe, specifically to record biodiversity information.

NatureServe supports an international network of more than 80 conservation data centres. Of these data centres, British Columbia's Conservation Data Centre was one of the first Biotics 4 installations. Parks Canada was so impressed by Biotics 4's capability to record biodiversity information, they decided to use the system to track information about our national parks.

Biotics 4 is built on an Oracle database and incorporates custom applications for spatial data management, descriptive data management, data import/export, data reconciliation, and reporting. The spatial component of the system is a custom geographic information system (GIS) application that supports basic digital mapping, spatial analysis, and data visualization.

While developing Biotics 4, NatureServe took advantage of the opportunity to review and revise data collection standards established 30 years earlier by its parent organization, The Nature Conservancy. The most significant changes were in spatial mapping standards. The advent of GIS technology made it imperative that all network programs apply the same mapping standards so that data could be compared between jurisdictions and summarized regionally, nationally, and internationally. Criteria used to determine conservation status also underwent critical review. The result is a standard more in line with that used by The World Conservation Union (IUCN).

The capacity of Biotics 4 to record biodiversity information is astonishing. Staff at British Columbia's CDC say it will be years before they can take advantage of software's full potential. 

Input welcomed

The Conservation Data Centre welcomes input from knowledgeable people throughout the province. If you can provide new or improved information about anything you see, either on the BC Species and Ecosystems Explorer or the Terrestrial Information Map Service, the CDC would love to hear from you.

Contact the BC CDC at: cdcdata@victoria1.gov.bc.ca

Biotics Slide show: www.natureserve.org/prodServices/biotics.jsp

BC Species and Ecosystems Explorer: <http://srmwww.gov.bc.ca/atrisk/toolintro.html>

Terrestrial Information Map Service: <http://srmwww.gov.bc.ca/atrisk/ims.htm>