

Fighting extinction

Mapping software created here tracks health of 50,000 plant and animal species

By Peter Hughes

AT first glance, it's hard to see how a computer software company could be helping to save rare animals and plants from extinction. But for Linnet, an information technology firm based in downtown Winnipeg, protecting endangered species is a big part of its business.

Linnet has created computerized mapping software that is being used by a U.S.-based conservation group to track the health of more than 50,000 plant and animal species on the North American continent. The

latest version, *Biotics 4*, is currently being rolled out to a network of 75 regional conservation centres, whose staff tirelessly trudge across the continent surveying endangered species. In this

province, the work is done by the Manitoba Conservation Data Centre (MCDC), a division of Manitoba Conservation. Its handful of biologists and ecologists go out into the bush every summer to survey and record plant and animal populations. They are particularly interested in species whose numbers are dangerously low — for example, the burrowing owl of the southern Prairies.

Using old-fashioned pens and notepads, plus satellite positioning devices that give them precise map co-ordinates for each site, the researchers record detailed information about the places where rare species are found. This includes not only the location, but also the type of habitat, the size of the colony, whether an animal has previously been banded, and the presence of any eggs or offspring.

Once back at base, they enter the data into the Biotics computer system.

"This information can be useful if someone in the future wants to look for similar sites," says Jason Greenall, a biologist with MCDC.

The provincial government and the federal government both maintain lengthy registers of endangered species.

Armed with this list, staff at the centre are hopeful they can alert public authorities, landowners and property developers to a problem before it happens.

"The Biotics package enables us to map the location of any species in Manitoba," says Greenall. "We tend to concentrate on mapping the locations of provincially rare species. That means that if a development project is slated for a particular area, we can provide information about, for example, any rare birds or wetlands living in that location.

"If it's a rare bird, it could simply be a case of rescheduling the work to avoid breeding season. If it's an orchard, we could say, 'Work over here rather than over there.'"

Once a year, each of the 75 regional centres, including MCDC, uploads its entire database to NatureServe's headquarters in Arlington, Va. Originally Linnet, as a Winnipeg company, supplied its mapping software exclusively to MCDC. However, the firm struck gold when NatureServe awarded it a contract to provide the same software to its entire North American network.

The end product of all the sore feet and keyboard-tapping is a breathtaking on-line encyclopedia of plants and animals in North America. A condensed version of it, *NatureServe Explorer*, is accessible on the Internet. It can locate almost any species, along with information about its habitat, its history and its current numbers.

Take the whooping crane, for example. Two hundred years ago, whooping cranes, the tallest birds in North America, flapped across the Prairies sky in their hundreds, heading south to the Texas coast for the winter and returning in the spring to breed in the wetlands of northern Canada. But when human settlers began to shoot the birds for their feathers and to drain their habitats for farmland, the whooping crane population plummeted. By 1939, you could almost count all the whooping cranes in the world on your fingers and toes.

Happily, whooping crane numbers have since picked up, to around 250 at the last count. With luck, they'll be spared the fate of the passenger pigeon, the last specimen of which died in a zoo in 1914. But that's not enough to make cranes off NatureServe's list of 20 "critically imperilled" plants and animals in Manitoba.

As Web sites go, *NatureServe Explorer* is good entertainment. But it also has a serious purpose. It is often said in business that you can't count on what you can't measure. NatureServe's mission, using the technical know-how of Linnet, is to provide biodiversity information to any organization that needs it — be it a conservation charity or a forest products company.

Larry Sugarbaker, chief information officer at NatureServe, says the Biotics system "is used extensively by government agencies, both provincially and federally, as well as by environmental consultancies and non-profit organizations — for example to conduct environmental impact assessments.

"While most of us consider ourselves conservationists, we pride ourselves on the authoritative service we provide."

With a little help from Linnet, conservationists in Canada and the U.S. now have half a chance of spotting a disappearing species before the last one slips unnoticed through the deer-stained thicket.