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The other North American election

As Canadian scientists work to maintain their international reputation, a little encouragement from the election candidates would be appreciated.

Canadians go to the polls to elect a new government on 14 October. Although the initial stages of the campaign focused on the environment (see page 268), the two major parties, Conservative and Liberal, have said little or nothing about science policy in general. This is a shame. Canada saw big boosts to its research funding from the late 1990s to 2000, including the creation of Canada Research Chairs, which brought good people into the country, and the Canada Foundation for Innovation, which pumped billions into infrastructure. Those investments have been maintained, and science funding is still on the rise. But the gains are vulnerable in a competitive international market, warns the prime minister's former science adviser, Arthur Carty: "We have to be careful, having reached the top of the mountain, that we don't slide down the other side very quickly."

Both parties promise to provide financial incentives to innovative companies, especially those involving green technologies. But broader questions of research funding have so far not come up in the campaign. This may reflect a lack of difference between the parties on the issue, or perhaps just a lack of urgency; with the exception of climate change, the general mood on science policy seems to be 'if it ain't broke, don't fix it'.

But many argue that it is broke. The retired right-wing politician Preston Manning slammed the system in the Canadian media last December after the recent shortage of nuclear isotopes. He lambasted Canada for its lack of a federal science department or ministry and the dearth of scientific or engineering training among parliamentarians. The office of the National Science Advisor was abolished earlier this year when Carty stepped down (see *Nature* **451,** 505; 2008). And the committee that now advises the prime minister on matters of science is packed with industrial as well as scientific experts.

"Many Canadian scientists are complaining about an undue emphasis on commercially focused research over long-term basic research."

Indeed, many Canadian scientists are seeing, and complaining about, an undue emphasis on commercially focused research over long-term basic research. Such complaints are heard in many other countries too. But in Canada the problem is compounded by the fact that the current government has channelled new science funds into four restrictive priority areas — natural resources, environment, health and information technology — and that scientists are often required to scrounge matching funds from elsewhere to top up their grants. Furthermore, the government this month defined sub-priority areas that mix in obvious commercial influences: alongside 'Arctic monitoring', for example, sits 'energy production from the oil sands'.

The Canadian election's focus on climate, at least, is welcome. But one always hopes that research funding will warrant a mention in political manifestos. That hasn't happened yet in Canada — and it should. ■

Handle with care

Ecologists must research how best to intervene in and preserve ecosystems.

For many people — including many scientists — 'nature' is defined by a negative: it exists where people do not. Nature lies outside the urban and agricultural realms, in regions of Earth where natural processes are unimpeded. Nature is where fallen logs rot and acorns grow, wildfires turn woodlands into meadows, and barrier islands shift with the currents — all without human interference. By extension, this definition suggests that nature is best protected by keeping humans far away, so that it can continue to run itself.

But there is a serious problem with this view. If nature is defined as a landscape uninfluenced by humankind, then there is no nature on the planet at all. Prehistoric peoples changed their surrounding ecosystems, whether by installing orchards in the Amazon or — according to one increasingly accepted theory — by hunting many large mammals to extinction in North America. And modern humans are changing the global environment even more profoundly, whether through planet-wide climate change, or by the worldwide movement of synthetic chemicals through the food chain. Today there is no place untouched by man — a point made by environmentalist Bill McKibben as early as 1989 in the starkly titled *The End of Nature*.

Nature doesn't have to end if we stop defining it by humankind's absence. Humans prize natural spaces because they are historic, culturally significant, aesthetic and scientifically interesting — and, increasingly, because they have been recognized as providing essential services such as filtering water, ameliorating storm surge, providing fish, game and timber, and sequestering carbon. Ecosystems that are valuable for one or more of these reasons can be identified by quantifiable biological traits, such as the presence of certain key species or processes. In the Białowieża forest of eastern Europe, which has a long history of human activity, for example, one could cite the presence of European bison and of a large amount of dead wood as characteristics worth preserving (see page 277).

Retaining such characteristics takes more than the absence of active destruction. It is precisely because of humanity's pervasive influence that even the least changed ecosystems need help surviving in the future. Białowieża's core is so small that the dynamic processes that once drove its mosaic of different micro-ecosystems probably can't