

authored an assessment of mammals that looks for larger patterns. For example, it turns out that marine mammals, and land mammals of south and southeast Asia, are in the worst shape — precisely the kind of knowledge that could help scarce conservation dollars go further (see page 717).

The IUCN is even getting into the business of predicting which species will one day become threatened as a result of climate change. Species with specific environmental needs or that have problems dispersing are likely to be most affected. The union is beginning similar work on other threats in collaboration with the Zoological Society of London.

This week, the union announced a new Global Mediterranean Action Network to help coordinate research on various Mediterranean-like biomes (including California and the Cape of South Africa). And IUCN president, Valli Moosa, was set to announce his vision for how the extraterritorial ocean should be managed so that the ecosystems of the high seas do not remain a conservation-free zone. Meanwhile, the IUCN's various programmes are working on issues ranging from making hotels more environmentally friendly to researching what an effective 'payments for environmental services' legal regime would look like.

Still, the heart of the organization is the Red List. Whatever its flaws, most people agree that the list is an irreplaceable indicator of global environmental health, using a metric that feels intuitive to

most of us: how many extinctions have we caused in the past four years? It is no surprise that the drafters of the Millennium Development Goals chose the Red List to be an indicator of progress towards reducing biodiversity loss.

Of course, the number of species explicitly studied and measured is dwarfed by the number of species yet to be discovered. To address this, the IUCN is beginning to use a sampling method to estimate the state of play in less-well-studied groups of organisms, such as invertebrates, taking its mammal survey as a calibration point.

The IUCN deserves credit for continuing to invest in the list, even though it clearly understands that conserving biodiversity requires much more than the list alone. Yes, ecosystems are more than just the sum of their parts — but there may be no more visceral way to convince people that conservation is worthwhile than to point to a species that has nearly died out due to human fumbling. The fishing cat (*Prionailurus viverrinus*) of south-east Asia has almost vanished. If reading that causes a pang, good. In these tumultuous economic times, when people are still trying to work out how to value 'ecosystem services', and when a full understanding of ecosystems is still decades away, the emotional force of extinction is nothing to sniff at. ■

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## Beta blockers?

Proprietary data formats may be legally defensible but open standards can be a better spur for innovation.

A historian of science and computing, and a scholar whose PhD thesis was on "professionalization of cooking among domestic servants in eighteenth-century France", might seem unlikely characters to find at the centre of a multimillion-dollar lawsuit. But that is exactly what has happened in the suit brought against George Mason University (GMU) in Fairfax, Virginia, by Thomson Reuters, the company probably best known for its ISI science indicators.

Dan Cohen, director of GMU's Center for History and New Media, and Sean Takats, a GMU history professor, are also directors of Zotero: open-source software developed by the history centre that lets researchers organize and share their digital information iTunes style, whether it is in the form of citations, documents or web pages. Zotero is free and popular, and has attracted some 1 million downloads since its launch in October 2006.

Thomson makes the proprietary bibliography software EndNote, and claims that Zotero is causing its commercial business "irreparable harm" and is wilfully and intentionally destroying Thomson's customer base. In particular, Thomson is demanding that GMU stop distributing the newer beta-version of Zotero that allegedly allows EndNote's proprietary data format for storing journal citation styles to be converted into an open-standard format readable by Zotero and other software. Thomson claims that Zotero "reverse engineered or decompiled" not only the format, but also the EndNote software itself.

The company is seeking a minimum of US\$10 million in damages annually until GMU halts distribution of Zotero's new feature. It also demands that GMU "terminate" the ability of each Zotero user to use or distribute any open-source files converted from EndNote's own data format. GMU seems ready to fight the suit; a spokesperson told *Nature* that the university believes it is "well within its rights", but declined to go into further detail given the ongoing litigation. Thomson was contacted but declined to comment, saying: "It is the policy of Thomson Reuters that we do not comment on pending litigation."

Thomson is claiming on the grounds that GMU has a site licence to EndNote, and that Zotero's actions breach the terms of the licensing contract. Thomson did not challenge GMU on grounds of copyright law, in which certain protections are in place to allow for creating interoperability. Thomson also claims that Zotero is infringing on the trademark 'EndNote' to induce Zotero users to convert EndNote's proprietary style files.

Litigation, which may go to a jury trial, is pending, so judging this case on its legal merits would be premature. But on a more general level, the virtues of interoperability and easy data-sharing among researchers are worth restating. Imagine if Microsoft Word or Excel files could be opened and saved only in these proprietary formats, for example. It would be impossible for OpenOffice and other such software to read and save these files using open standards — as they can legally do.

Competition between open-source and proprietary software is long-running, as personified by the struggle between Windows and Linux for desktop and server operating systems, but also in many branches of software used by scientists. Researchers tend to lean towards open sharing, but they will also pay for added-value features, and it's important that the playing field is level. Ultimately, the customer is king. ■