



Biodiversity

Let the locals lead

To save biodiversity, on-the-ground agencies need to set the conservation research agenda, not distant academics and non-governmental organizations, argue **Robert J. Smith** and colleagues.

To stem biodiversity loss, it is essential to identify priority areas for conservation and take effective action within them. However, much of the research on this topic is only peripherally relevant to these tasks, and contributes little to local conservation efforts. Researchers focus on their pet interests and on making an impact in the scientific literature, taking little notice of the institutions and organizations that actually develop and implement conservation plans. Meanwhile, international non-governmental organizations (NGOs) influence academics' priorities without the latter always appreciating the constraints that shape NGO agendas.

A good example of how global NGOs, scientific fashion and academic journals combine to marginalize relevant conservation science is the noisy and largely fruitless debate that followed the publication of a biodiversity hotspots map¹ in 2000 by Conservation International, a leading NGO. The map was marketed as a tool for identifying where conservation investment would have the biggest impact, but this involved playing down both how little was actually known about species distributions and that accurate global data sets on the costs of implementation were not available.

These limitations did not stop the map doing its main job, which was to raise funds and show broadly where Conservation International should target its efforts. In fact, the initiative has been extremely successful and helped to raise an estimated US\$750 million for conservation within hot spots. But the hype led many academics to treat priority area setting as simply a question of working out what lives where. This led to many studies that took no account of how plans are implemented.

Different priorities

International NGOs have played a vital part in identifying important conservation areas, especially in countries where local government agencies are underfunded or ineffective. Yet because each NGO answers to its members and donors, its priorities can never exactly match those of local conservationists (see graphic). The constant pressure on NGOs to fund-raise and market their work exacerbates this disconnect. When local institutions are weak, this can cause three problems.

First, the need to create a sense of urgency

among donors leads to short-term funding and 'quick and dirty' projects, which rarely gain local long-term support². Second, NGOs tend to advocate their institutional methodology, rather than allowing local agencies to develop approaches that best match their needs. Third, NGO researchers find it easier to produce articles on broad-scale issues for high-impact journals, which helps to build scientific support for new campaigns³, than to write papers about research on local issues.

Saving globally important biodiversity requires a radical rethink by conservation scientists. Researchers must allow government conservation agencies and other local groups to set the broad agenda for research and decide how to implement results. International NGOs should have only a supporting role: conserva-

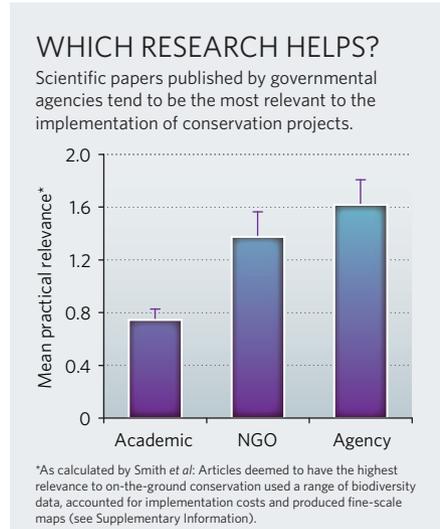
Crucially, this prioritization forms part of a broader planning scheme, which is continually updated and used to monitor the effectiveness of protected areas and assess development applications. This system has guided the South African government's National Protected Area Expansion Strategy, the WWF-Netherlands Black Rhino Range Expansion Project and the proposed Critical Ecosystem Partnership Fund programme in the Maputland-Pondoland-Albany hot spot.

Local approach

South Africa is a world leader in priority area setting and implementation⁶. But agencies in many other developing countries lack the means and influence to implement change. How should governments and researchers overcome such shortcomings? One way is to develop 'social-learning institutions', which bring together local and international conservationists and researchers. Government staff are often poorly trained, funded and motivated. Working with outside experts gives them access to new skills and contacts, enabling them to develop their own conservation agendas. This is essential at a time when too many conservation programmes in biodiversity-rich developing countries are driven by foreigners, an approach that causes local resentment and makes conservation seem a marginal issue.

An example of an effective social-learning institution is the Thicket Forum in South Africa's Eastern Cape province. The Forum brings together representatives from government, NGOs, consultancies, farmers and other landowners with ecologists and social scientists to exchange knowledge and identify priorities for research and training⁷. Academics have a crucial role, but the entire membership sets the agenda, which helps in balancing views and targeting activities. This has been particularly useful for guiding research, and for training the next generation of conservation professionals. Such an approach is not unique to South Africa or the conservation sector and could be widely adopted elsewhere.

To help ensure that local organizations are equipped to make decisions about conservation research, foreign donors must collaborate directly with them about their specific requirements. Donors should also fund local



tion plans are more legitimate and politically acceptable when set locally⁴, where they can also be better coordinated with other sectors such as land-use planning, agriculture, water and climate change.

The advantages of this approach can be seen in the South African province of KwaZulu-Natal (KZN). Ezemvelo KZN Wildlife, the agency charged with conserving biodiversity and managing the province's network of protected areas, works with researchers to identify areas for conserving nationally and internationally important species, habitats and ecosystems⁵, helping match donor and NGO priorities with those of the province.



M. POWELL

The Working for Woodlands project assesses the survival of cuttings planted to restore degraded thicket in the Baviaanskloof World Heritage Site in South Africa.

groups directly, to enable them to finance the establishment of social-learning institutions and the research priorities that those groups identify, and to train agency staff and local experts. Currently, donor money tends to flow through international NGOs, so in many countries weak local agencies stay that way. An independent oversight body is needed to coordinate such direct funding, to ensure that responsible local agencies receive consistent funding from donors.

Once such mechanisms are in place, what kind of research should social-learning institutions and local conservation agencies do? There is no shortage of topics: investigating what makes people support or block conservation projects; the social and economic implications of different methods for prioritizing conservation areas; the social, economic and biodiversity benefits of different management approaches; the effectiveness of these conservation projects; approaches for building support for conservation; and many more.

Research on the geographical distribution of biodiversity and how this will change with climate change — one of the hottest topics in academic conservation science — is also needed in some places, but only if produced in a way that helps local decision-making.

Finally, international organizations and journals can help to refocus conservation research on what local agencies and communities

need. For example, the World Commission on Protected Areas, which represents the interests of governments and NGOs, could catalogue the approaches used around the world and highlight the most successful, so local agencies can see what has worked and what hasn't. The United Nations Environment Programme World Conservation Monitoring Centre could make national maps of priority areas internationally available. This would be social learning on a grand scale. In addition, research journals should assess whether articles make naive assumptions about implementation, and recognize the value of locally important case studies, rather than assuming that global analyses are always the most powerful.

Such profound changes would need to be made carefully. Directly funding weak agencies has often failed in the past and we need to learn from those mistakes. The new approach should be piloted in countries where success is most likely and then adapted to more challenging locations. Some conservation agencies will initially need a lot of help from international NGOs and researchers, but this should not be a problem as long as the financial and academic incentives are in place.

The conservation-science community should recognize those with the highest academic or media profile can no longer set the research agenda. Moreover, academics need to understand that if they work in isolation from

local conservation agencies, those who might usefully apply their research will probably ignore it. If academics really want to change the conservation agenda or achieve results on the ground, they should join or set up social-learning institutions as part of a planning process. This will take more time than simply firing off another paper, but it will also lead to more interesting, novel and important research. ■

Robert J. Smith, Diogo Veríssimo, Nigel Leader-Williams are at the Durrell Institute of Conservation and Ecology, University of Kent, Canterbury, Kent CT2 7NR, UK.

Richard M. Cowling is in the Department of Botany, Nelson Mandela Metropolitan University, Port Elizabeth 6031, South Africa.

Andrew T. Knight is in the Department of Conservation Ecology and Entomology, Stellenbosch University, Matieland 7602, South Africa.

1. Myers, N., Mittermeier, R. A., Mittermeier, C. G., da Fonseca, G. A. B. & Kent, J. *Nature* **403**, 853–858 (2000).
2. Knight, A. T. *et al. Bioscience* **57**, 256–261 (2007).
3. Smith, R. J., Veríssimo, D. & MacMillan, D. C. in *Trade-offs in Conservation: Deciding What to Save* (eds Leader-Williams, N., Adams, W. M. & Smith, R. J.) (Wiley-Blackwell, in the press).
4. Rodriguez, J. P. *et al. Science* **317**, 755–756 (2007).
5. Goodman, P. S. *Bioscience* **53**, 843–850 (2003).
6. Balmford, A. *Trends Ecol. Evol.* **18**, 435–438 (2003).
7. Knight, A. T. & Cowling, R. M. S. *Afr. J. Sci.* **102**, 406–408 (2006).

Supplementary information accompanies this article online at go.nature.com/hrKvfg.

See Editorial, page 251, and News Feature, page 266. For the whole biodiversity special see www.nature.com/darwin.

"If academics really want to achieve results, they should join or set up social-learning institutions."