

SCIENCE POLICY

Mutualism: Science – Policy Interactions in Scotland

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Ecologists and policy-makers don't speak the same language. Researchers probe questions over long timescales whilst policy-makers need answers tomorrow, if not today. In the words of the authors of a recent paper on the science – policy interface in public health: 'scientists and policy-makers have different mentalities: for example, their goals, attitudes towards information, languages, perception of time, and career paths differ. The imperatives that drive scientists and policy-makers are also different, along with their production processes and what they consider to be good evidence'.¹

With such apparently insurmountable disparities between ecologists and policy-makers, it may seem an impossible task to break down the barriers between these two communities. Yet to encourage good communication between scientists and policy-makers is essential to the development of evidence-based, sound environmental policy. This is central to the work of the British Ecological Society and this ambition has been ably championed by the Society's Scottish Policy Group in 2014, with a number of networking events for ecologists and policy-makers.

Scanning the horizons of Scottish environmental policy



Prof. Rob Brooker, Chair of the Scottish Policy Group, with Graeme Cook from the Scottish Parliament Information Centre (SPICe) and participants at the Policy Training Workshop

From climate change to invasive non-native species, population growth and demographic change to the emergence of novel technologies, there are plenty of issues on the horizon that exercise policy-makers and researchers alike. Yet these two communities may not often come

together to discuss these challenges and share their perspectives, identifying policy questions and research needs. Back in June, members of the Scottish Policy Group, staff from the Scottish Government and Scottish Natural Heritage, convened in Edinburgh for an evening workshop to do just this.

One of the main points to emerge from wide-ranging discussions was the need for greater communication between scientists and policy-makers. This is perhaps not surprising, or particularly novel, but it was heartening to have the feedback from policy colleagues that regular input from ecologists is welcome. Ecologists need to be better at understanding what the users of research require and to work with them to design studies from the start so that these are answering policy-relevant questions; engaging in trans-disciplinary, as well as interdisciplinary research. Meanwhile, policy-makers must be more adept at communicating with researchers to tell them what these policy-relevant questions are.

A full report of the topics to emerge from discussion is available on the BES website². To provide a flavour of the specific points to emerge in relation to particular policy areas, there was a particular focus on invasive non-native species: namely the need to be more fleet of foot in

preparing risk assessments to determine which species are major threats and where further action is required. Dealing with risk and conveying this to policy colleagues in the absence of robust evidence was also discussed. Regular horizon scanning by standing groups of experts could help to identify emerging threats and there was a suggestion that the BES could play an important role in facilitating this.

The ongoing management of invasive non-native species was highlighted by both scientists and policy-makers as a research gap. Finding an expert on particular species that pose a threat is relatively straightforward. It is more challenging to find evidence on how to control and manage a non-native species when established. Evidence-based ecological advice on the different options to manage invasive non-native species, with research into these options, is important.

This event provided an opportunity to consider some issues of significance to environmental management and to think about where policy and ecological research may be lacking. Perhaps most importantly, this informal event allowed networking between researchers, practitioners and decision-makers, and resulted in an undertaking to repeat the exercise in summer 2015.

Policy, POSTnotes...and Pandas

Early career researchers represent the future of ecology and of the British Ecological Society. It was therefore extremely encouraging that a Policy Training Workshop, organised by the Scottish Policy Group at Edinburgh Zoo in October, saw over thirty participate. The opportunity to visit the zoo's giant pandas, Yang Guang and Tian Tian, was surely a draw, but undoubtedly too was the chance to hear from an engaging panel of speakers who had experience of straddling the science–policy interface.

Professor Maggie Gill, former chief scientific advisor to the Scottish Executive's (now Scottish Government) Environment and Rural Affairs Department, delivered her reflections on the importance of scientists communicating complex concepts simply. Dr Ian Bainbridge, Scottish Natural Heritage, also touched upon simplicity, brevity and relevance in dealings with policy-makers. Ian also emphasised the importance of ecologists familiarising themselves with the relevant policy-makers (an easier task in Scotland, with fewer people to get to know in Government, than in England). Reliability – the standing and track record of researchers communicating with policy-makers – was also discussed; developing a reputation for credible advice will lead to further calls from policy colleagues.

Neil Ritchie, Scottish Government, alluded to this in his own presentation, speaking about needing to know, quickly, who to pick up the phone and call, while being sure that he will receive a useful answer. Neil acknowledged that policy-making is '50,000 shades of grey', with complex issues requiring information to be collated from numerous sources and an element of 'making it up as you go along', rather than an ordered and rational policy-cycle. Neil called for simple, short, understandable briefings that demonstrate multi-disciplinary engagement in answering tricky policy-relevant questions.

Such a briefing was drafted last year by Danny Heptinstall, University of Aberdeen, as the BES's Fellow at the Parliamentary Office of Science and Technology. Developing a POSTnote

on 'Risks from Climate Feedbacks', and launching this earlier in 2014 at a breakfast briefing in Westminster, allowed Danny an insight into some parliamentarians' perceptions of ecologists, as 'green' and somehow a bit strange. The briefing event, bringing together MPs and expert speakers, allowed MPs to dispel these preconceptions and led one MP to query why more science advice wasn't informing policy.³

From traditional to modern approaches to monitoring

The final element in the Scottish Policy Group's busy calendar this year was the joint conference between the BES, the Science and Technical Group to the Scottish Biodiversity Strategy and the Chartered Institute of Ecology and Environmental Management (with additional support from the RSPB's Centre for Conservation Evidence). Taking place immediately after the Policy Training Workshop, across Edinburgh at the Royal Botanic Gardens, BES President Professor Bill Sutherland's opening lecture set the scene for engaging and stimulating discussions the next day, of which there is space only to reflect a flavour here (a summary of discussion is available on the BES website)⁴.

Environmental monitoring is at the heart of delivering the solutions needed to help conserve biodiversity, using both what may be considered more traditional methods and novel approaches. Drones, robots and 'e-DNA' will be used in the future to locate species to be monitored, suggested Professor Sutherland.

Increasingly sophisticated software will be able to feed back to members of the public, citizen scientists, greater information about the organisms they have recorded and entered online. Metadata recorded, for example by smartphones, at the same time as a sighting of an organism, will increasingly be integrated with other information about the behaviour, ecology and conservation status of species. This will allow the development of models for population changes, benefiting decision-making regarding management by policy-makers and practitioners.

Continuing the conversation

A significant theme to emerge from all of this year's Scottish Policy Group events has been the need to maintain the conversations between the ecological and policy communities begun through the work of the Group. Regular communication is vital to build trust.



Bill Sutherland delivering his lecture on new technologies for monitoring biodiversity.



Delegates networking at the BES's joint conference on 'Protecting Scotland's Biodiversity: Monitoring in Action'.

Responding to the needs of policy-makers requires this community of research users to speak to ecologists at an early stage, informing the way that research projects are designed to answer policy-relevant questions. The Scottish Policy Group certainly intends to allow further opportunities for these two groups in Scotland to mix. Plans for 2015 already include an informal evening networking ('Pie and a Pint') event mooted for the spring, with a follow-up horizon scanning workshop in the summer. Finally, there will be the opportunity to showcase the work of the Scottish Policy Group and wider BES to Members of the Scottish Parliament in December 2015, when the group organises a reception at Holyrood, sponsored by Mary Scanlon MSP, as part of the busy programme for the BES Annual Meeting in Edinburgh.

Finally, in a return to the paper mentioned at the beginning of this article, the authors conclude by

describing the relationship that they wish to see develop between scientists and policy-makers. They state that: "It is our hope that scientists and policy-makers [in public health] can draw lessons from ecology...Ecologists will tell us that populations can evolve together antagonistically or complementarily... The term 'mutualistic relationship' is used to describe the co-evolution of two populations in which both benefit".

The excellent work of the Scottish Policy Group since its formation in 2012, and in particular this year, does indeed provide a valuable example from ecology of how interactions between scientists and policy-makers can be encouraged. Over the coming years, doubtless the relationships between ecologists and decision-makers in Scotland, developed through the Group's busy programme of work in 2014 and beyond, will continue to flourish and develop mutualistically, to the benefit of both communities.

The BES Scottish Policy Group is chaired by Professor Rob Brooker, James Hutton Institute. Any member of the BES with an interest in Scottish environmental or science policy is welcome to join.

Group members will benefit from:

- Keeping up-to-date with policy developments in Scotland;
- Developing contacts at the science-policy interface;
- Exchanging information and ideas;
- Receiving dedicated Scotland policy briefings from the BES Policy Team;
- Having the opportunity to influence environmental policy-making in Scotland.

To join the group, email the External Affairs Team: policy@britishecologicalsociety.org.

REFERENCES

- ¹ Choi, B.C.K., Pang T., Lin, V., Puska, P., Sherman, G., Goddard, M., Ackland, M.J., Sainsbury, P., Stachenko, S., Morrison, H., Clotney, C. 2005. Can scientists and policy makers work together?. *J. Epidemiol Community Health*, 59, pp632-637.
- ² Find out more about the Scottish Policy Group, and read a summary report of the horizon scanning session here: <http://www.britishecologicalsociety.org/public-policy/get-involved/scottish-policy-group/>.
- ³ We also learned from Danny that House of Lords champagne is better than that in the House of Commons, important for any PhD student to know if considering applying for next year's POST Fellowship: <http://www.britishecologicalsociety.org/public-policy/training-and-funding/bes-post-fellowship/>.
- ⁴ Details of our past Policy events can be found online here: <http://www.britishecologicalsociety.org/public-policy/policy-events/past-events/>.