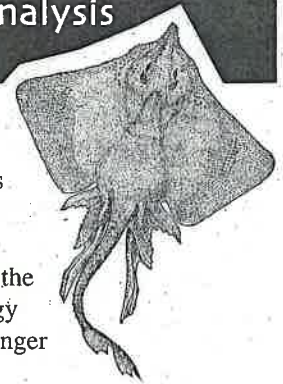




The Logic of Good Decisions: Learning from Population Viability Analysis by Mark Burgman

Accurate predictions improve decisions. However, it may be just as important that predictions are comprehensible, persuasive, feasible, coherent, or authoritative. Effective social outcomes involve group decisions and usually depend on participatory decision making processes (O'Brien 2000, Pielke 2003). Models are important for conservation decision-making because they combine our current understanding of ecological systems with objective functions that measure the value of management alternatives. Stochastic models of the dynamics and persistence of species (population viability analyses, Reed et al. 2002) are important because of the pervasiveness of natural variation and lack of ecological knowledge. The new challenge in conservation biology is to develop frameworks that harness tools such as PVA to improve decision-making (Reed et al. 2002, Beissinger et al. 2006).



Steele et al. (in press) outlined a number of substantial issues in decision-making relevant to conservation biology. The objectively "correct" decision might not please any members of a group. Conversely, a popular decision may fail to be the correct decision. The conditions under which happy decision makers and correct decisions coincide may be enhanced by formal consensus methods. However, Steele et al. emphasised that consensus is futile when no fact of the matter exists.

In most practical circumstances, sufficient data are unavailable for accurate predictions. Typically in conservation biology, we lack understanding of population dynamics, parameters, spatial processes, distributional shapes, and dependencies. One attribute of good decisions is that they are robust to uncertainty. They provide for the possibility that models and data are wrong. For example, Regan et al. (2005) concluded that the most robust management option provided at least some benefits for a species, irrespective of the (uncertain) causes of decline. Explicit, coherent information about uncertainty gives decision-makers the opportunity to evaluate their attitudes to risk. For instance, Halpern et al. (2006) concluded that explicit modeling of uncertainty in marine planning allowed managers to quantify costs and benefits, and to communicate to management challenges to stakeholders.

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2006 ANNUAL MEETING

The 20th annual meeting of the Society for Conservation Biology, *Conservation Without Borders*, was held in San Jose, California, USA from 24–28 June. SCB was delighted to meet concurrently with the Society for Conservation GIS. We thank our major supporters, The David and Lucile Packard Foundation, Gordon and Betty Moore Foundation, and The Christensen Fund, as well as our many sponsors.

The 2006 meeting was SCB's largest to date, with ~1700 participants. More than 55 countries were represented, and 25% of participants were students. The scientific program included approximately 150 symposium presentations, 450 contributed oral presentations, and 200 posters.

Tremendous thanks to Volunteer Coordinator Karim Al-Khafaji and the 125 volunteers who ensured that on-site logistics ran smoothly and participant needs were met.



SCB Decides to Offset Its Carbon Impact

Emission of carbon dioxide and other greenhouse gases by humans are altering the earth's climate in ways that will profoundly affect our lives. In this century global climate change may produce a one meter rise in sea level, which would put most of Bangladesh and some island nations—and much of the United States state of Florida—under sea level. In addition to these impacts on humans, global climate change will have enormous impacts on biodiversity. For instance, in 2004 a team of conservation biologists at the University of Leeds concluded that by 2050, 15% to 37% of all land-based animals and plants may become extinct under the most plausible projections of climate change.

More than 95% of SCB's contribution to global warming derives from jet fuel burned to take people to our annual meeting. Each passenger on a fully-booked London–New York flight, for instance, is responsible for about 1.2 tons of carbon. Running our Executive Office for one year generates about 2% as much carbon as our annual meeting. In late May we polled registrants for the 2006 annual meeting about their willingness to increase registration fees to invest in projects that would offset the carbon generated by our travel. Nearly 350 registrants (25% of those registered at that time) responded. The survey results were the same for students and for non-students, and for people from developed or developing countries. By overwhelming majorities, respondents said

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- SCB should increase registration fees to offset the carbon impact of attending the annual meeting (97% support).
- Everybody should pay at least a symbolic amount, but persons from developing countries should pay much less (only 9% favored equal payments for attendees from developing countries).
- SCB should invest in projects like restoration of natural landscapes that directly benefit biodiversity in addition to reducing the amount of carbon in the atmosphere, even if these tons of carbon cost more (84% support).

A decisive majority (88%) of respondents were willing to increase their fees by \$20 or more—and nearly half (46%) were willing to pay “whatever it takes”—to offset the carbon impact of attending the meeting. Most respondents (71%) were willing to pay an additional \$10 or more if the project not only offset carbon, but did so in a way (such as restoration of degraded landscapes) that directly benefits biodiversity.

At the annual meeting, the SCB Board voted to act in accordance with the clear wishes of meeting attendees. As a result, you can expect registration fees for the annual meeting to increase by about US\$20 if you are from a developed country, and about \$5 if you are from a developing country¹. To offset the carbon impact of our 2007 meeting in South Africa, we are considering an exciting project to restore degraded landscape on a World Heritage Area (Baviaanskloof, the third largest natural area in South Africa, and the site of one of the optional field trips associated with the Port Elizabeth meeting). The project would store carbon, benefit biodiversity, and (by employing local people to restore native vegetation) alleviate poverty in the project area, with long term sustainability through ecotourism. Most carbon would be stored in an indigenous succulent evergreen plant which has been demonstrated to store carbon efficiently in a low rainfall system, with high resistance to loss from wildfire and decomposition.

To our knowledge, we are the first professional organization in ecology, conservation, or management of natural resources to take responsibility for our carbon footprint. We should be proud of ourselves as a professional society. As many respondents to the survey stated, global climate change is the most important issue of our time, and SCB simply must walk the talk and put our money where our mouth is.

But this is just a first step. As the science of carbon cycling is better understood, and as carbon offset markets mature, each year SCB will have to refine our estimate of our carbon impact, more rigorously ensure that our investments produce offsets that would not have happened without our dollars, and increase the durability of carbon stored by our projects.

The Board of Governors will need annual advice on these important recurring issues. We could simply partner with an existing and respected player in carbon offsets. But I'd like to explore an alternative, namely an advisory committee of SCB members to help SCB manage its growing portfolio of carbon

investments, much like Steve Humphrey and others help SCB manage its portfolio of financial investments. Right now I chair the Ad Hoc Carbon Offset Committee, and we have no expert in carbon cycling, carbon storage, carbon markets, or verification procedures. I'd like to replace most committee members (myself included) with appropriate experts from the SCB membership. I've learned just enough to realize that the realm of carbon offsets is every bit as complex as population genetics or landscape ecology, and I respect those with experience and knowledge of these issues. If you'd like to serve, send an email to paul.beier@nau.edu; briefly explain the expertise you'd bring to the committee.

The committee also will need policy experts and generalists to address some issues. For instance, in selecting an investment, should we favor a project near the location of our annual meeting? How much should we weigh risk relative to yield, or biodiversity benefit relative to carbon benefit? And will SCB move beyond offsetting our carbon impact toward reducing the amount carbon dioxide that needs to be offset? Several thoughtful respondents to our survey suggested that SCB reduce carbon impact by holding global meetings once every two to three years (perhaps with regional meetings in off-years), or by devising a “virtual meeting” format that does not require most participants to travel². These are the sort of “outside the box” suggestions that had not occurred to me, but that this committee should seriously consider as it advises the Board. Again, if you'd like to serve on this ad hoc committee (or the standing committee that may replace it), send me an email.

Paul Beier, SCB Secretary

¹ This surcharge is considerably less than our willingness-to-pay as indicated by the survey. The amount was calculated from the frequency distribution of distances traveled to our recent annual meetings, estimated carbon emitted per passenger on such flights, and the dollar cost of offsetting that carbon in a project that would benefit biodiversity. Note that we are collectively taking responsibility for “our carbon”—we do not charge different fees to those who walk, bicycle, or fly to the meeting.

² Amphibian conservationists and conservation veterinarians held several virtual conferences during 1996–2000, and the Convention on Biodiversity held one in 2005.

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