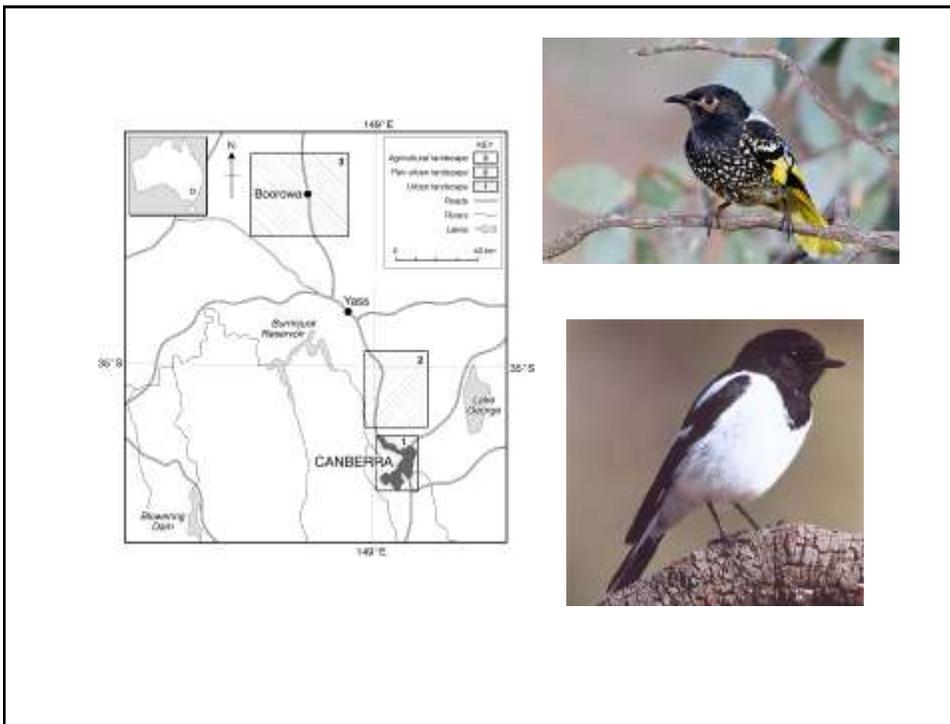
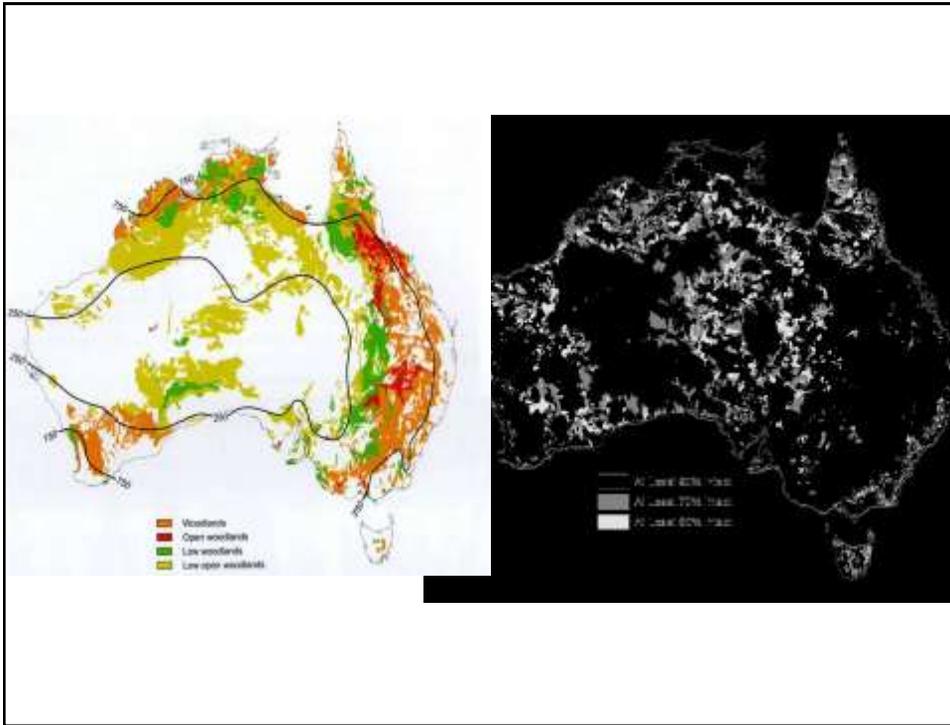




**PUTTING CONSERVATION SCIENCE INTO
PRACTICE: PERSPECTIVES FROM A
CONSERVATION NGO**

James Watson





An Assessment of the Focal-Species Approach for Conserving Birds in Variegated Landscapes in Southeastern Australia

JAMES WATSON,* DAVID FREUDENBERGER,†‡ AND DAVID PAULL*

*School of Geography and Oceanography, University College, University of New South Wales, Northcott Drive, Canberra ACT 2600, Australia

†Commonwealth Scientific and Industrial Research Organization (CSIRO), Sustainable Ecosystems, GPO Box 284, Canberra, ACT 2601, Australia, email d.freudenberger@dwc.csiro.au

Woodland fragmentation is causing the decline of species and functional groups of birds in southeastern Australia

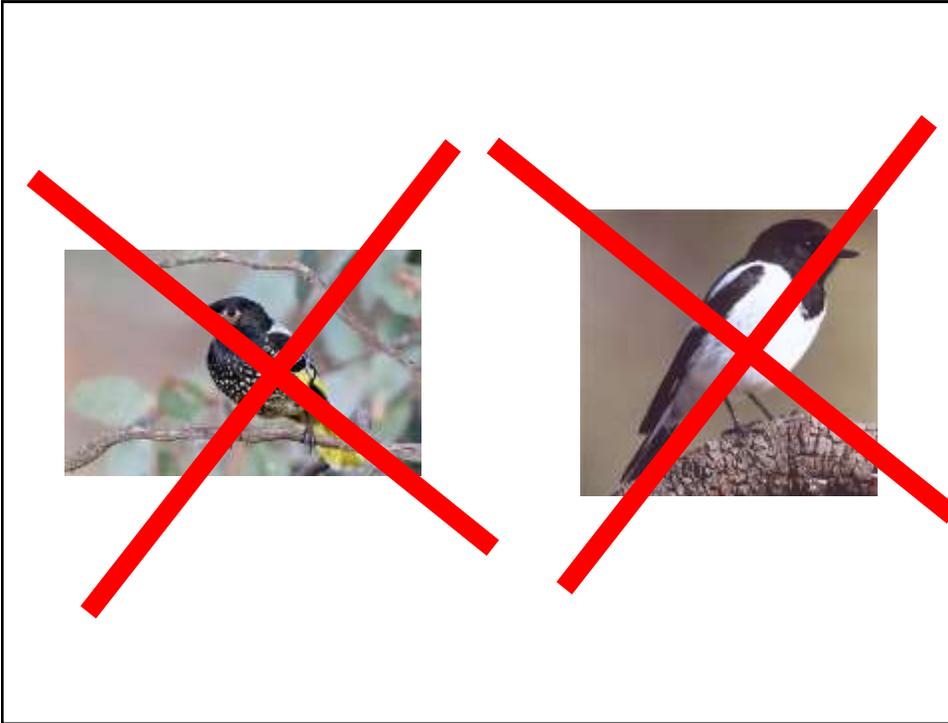
JAMES WATSON*, ALEXANDER WATSON*, DAVID PAULL* and DAVID FREUDENBERGER*

5

Revegetation Guidelines

Following the focal-species approach of Lambeck (1997), we identified the Hooded Robin as the species most sensitive to habitat area and complexity. We propose the Eastern Yellow Robin as the candidate focal species for isolation, although there were insufficient occurrences to detect a statistically significant effect of isolation. If the spatial and compositional requirements of these two species could be met, then the requirements of other bird species, limited by similar threats, should also be met. The conservation planning guidelines we derived from these two focal species were (1) conserve or create remnants at least 100 ha in size; (2) conserve or create a diverse vegetation structure (with a habitat complexity score of at least 12); and (3) conserve or establish woodland patches that are within a mean of 1.5 km of five neighboring patches.







Was I doing Conservation Science?

- ... *pursuit of a coherent goal: the protection and perpetuation of the Earth's biological diversity. A **mission-oriented, crisis-driven discipline** comprising both pure and applied science*
– Meine et al. 2006
- ...*not defined by a discipline but by its goal — to **halt or repair** the undeniable, massive damage that is being done to ecosystems, species, and the relationships of humans to the environment.*
– Ehrenfeld 1992

Was I doing Conservation Science?

- ... *pursuit of a coherent goal: the protection and perpetuation of the Earth's biological diversity.*
A mission-oriented, crisis-driven discipline
comprising both pure and applied science

**No, all I was doing was describing a problem
and hoping for the best**

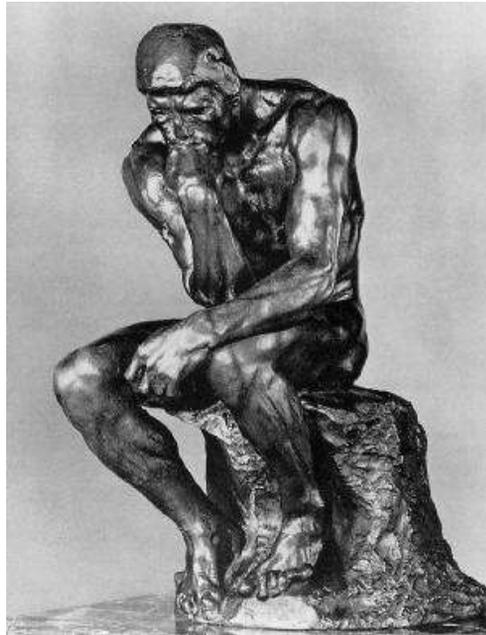
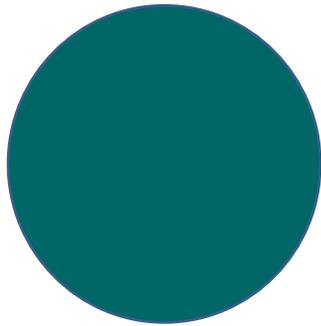
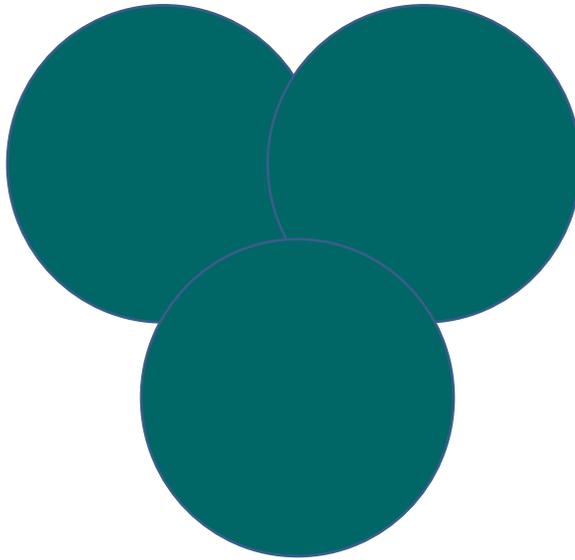
I was being a good ecologist

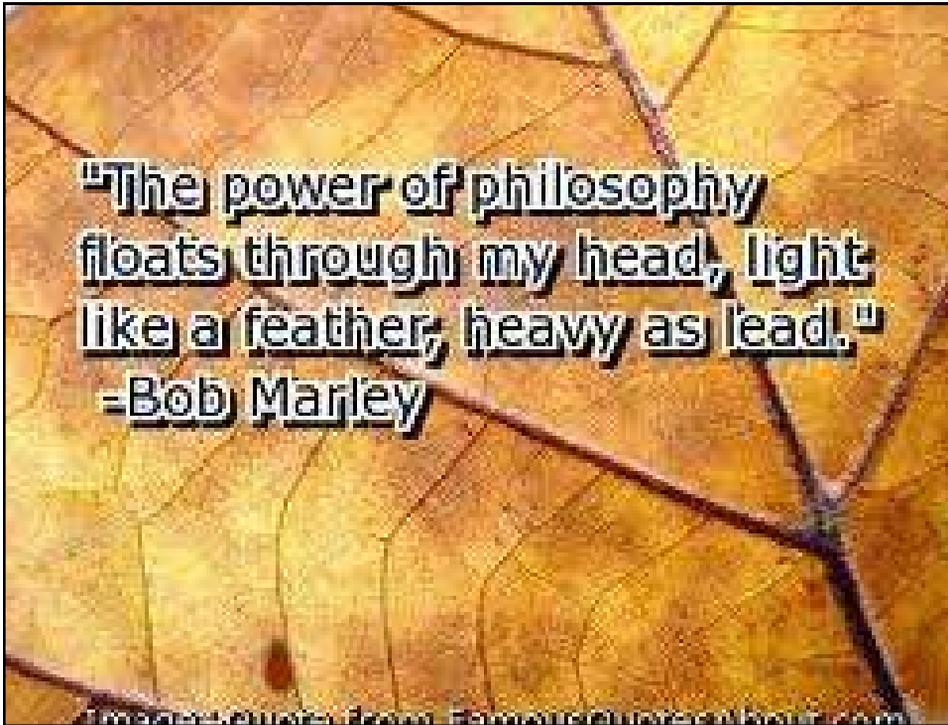
Andrew Knight

“Conservation is
a verb....it
means you
have to get off
your arse and
do something”



Conservation-based Science



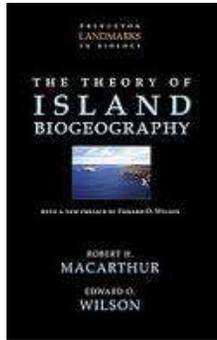


What is philosophy?

- Every area of science generates philosophical problems.
- Hardly any philosophical question have a 'correct' answer
- A good philosophical answer is one that is backed up by well-ordered and clear arguments
- The debates defines and pushes a discipline forward

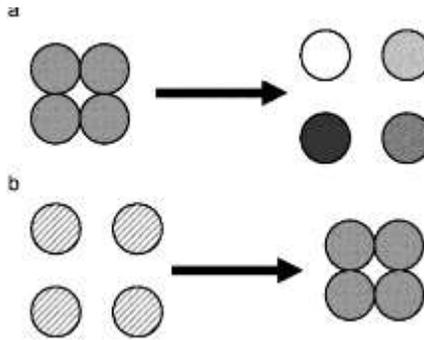
Biophysical questions dominated early on

THE ISLAND DILEMMA: LESSONS OF MODERN BIOGEOGRAPHIC STUDIES FOR THE DESIGN OF NATURAL RESERVES



JARED M. DIAMOND

Physiology Department, University of California Medical Center,
Los Angeles, California 90034, USA



Biodiversity hotspots for conservation priorities

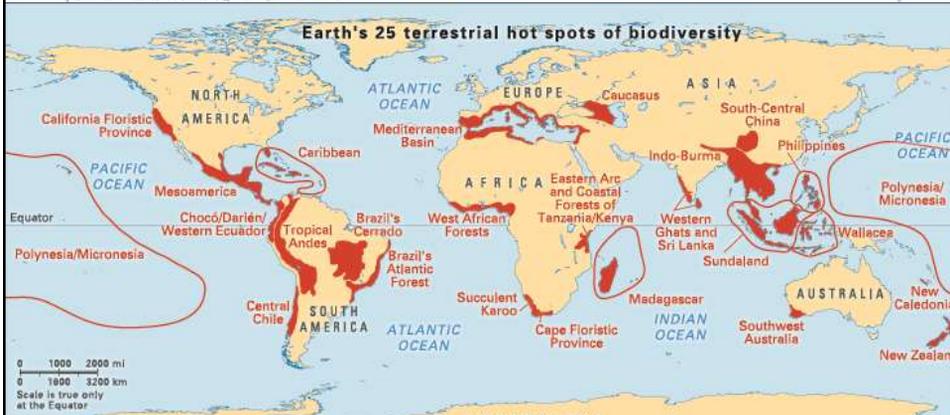
Norman Myers*, Russell A. Mittermeier†, Cristina G. Mittermeier†, Gustavo A. B. de Fonseca‡ & Jennifer Kent§

* Green College, Oxford University, Upper Meadow, Old Road, Headington, Oxford OX3 9SE, UK

† Conservation International, 2901 M Street NW, Washington, DC 20007, USA

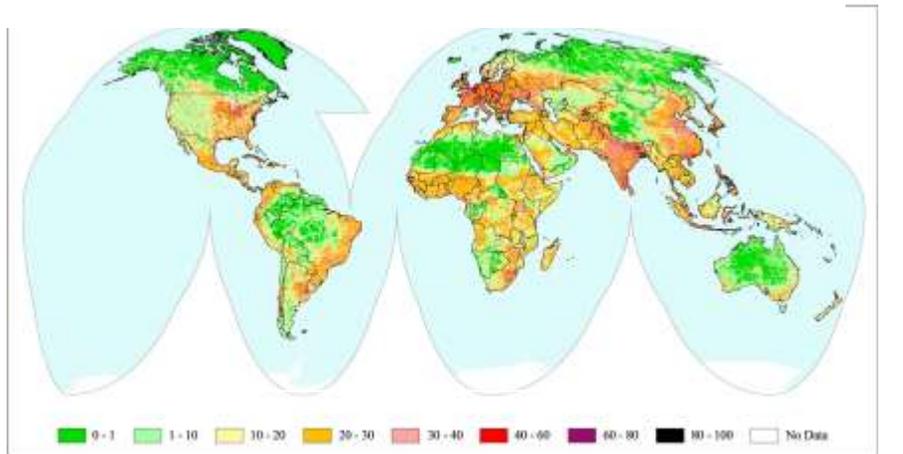
‡ Center for Applied Biodiversity Science, Conservation International, 2901 M Street NW, Washington, DC 20007, USA

§ 30 Dorchester Close, Headington, Oxford OX3 9SS, UK



The Human Footprint and the Last of the Wild

ERIC W. SANDERSON, MALANDING JAITEH, MARC A. LEVY, KENT H. REDFORD,
ANTOINETTE V. WANNENO, AND GILLIAN WOOLMER



Social and economic questions

NATURE ABOVE PEOPLE

ROLSTON AND "FORTRESS" CONSERVATION IN THE SOUTH

HANNA SIURUA

Biological Conservation 144 (2011) 545–547



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Biological Conservation

journal homepage: www.elsevier.com/locate/biocon



The New Conservation Debate: Ethical foundations, strategic trade-offs,
and policy opportunities

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^aSchool of Life Sciences, Arizona State University, PO Box 874304, Tempe, AZ 85287-4304, United States

^bSchool of Sustainability, Arizona State University, PO Box 873302, Tempe, AZ 85287-3302, United States

Conservation Planning for Ecosystem Services

Kai M. A. Chan^{1,2*}, M. Rebecca Shaw², David R. Cameron², Emma C. Underwood³, Gretchen C. Daily¹

1 Center for Conservation Biology, Department of Biological Sciences, Stanford University, Stanford, California, United States of America, **2** The Nature Conservancy, San Francisco, California, United States of America, **3** Department of Environmental Science and Policy, University of California Davis, Davis, California, United States of America

Despite increasing attention to the human dimension of conservation projects, a rigorous, systematic methodology for planning for ecosystem services has not been developed. This is in part because flows of ecosystem services remain poorly characterized at local-to-regional scales, and their protection has not generally been made a priority. We used a

Conservation, Human Rights, and Poverty Reduction

DAN BROCKINGTON,^{1,2} JIM IGOE,¹ AND KAI SCHMIDT-SOLTAU¹

¹School of Geography and the Environment, University of Oxford, Mansfield Road, Oxford OX1 3TB, United Kingdom

²Department of Anthropology, University of Colorado at Denver, Campus Box 103, P.O. Box 175564, Denver, CO 80217-3364, U.S.A.



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doi:10.1016/j.worlddev.2004.07.016

Poverty and Conservation: The New Century's “Peasant Question?”

STEVEN SANDERSON*

What actions to take

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ARTICLE IN PRESS

Science & Society



Is conservation triage just smart decision making?

Madeleine C. Bottrill¹, Liana N. Joseph¹, Josie Carwardine¹, Michael Bode¹, Carly Cook¹, Edward T. Game¹, Hedley Grantham¹, Salit Kark^{1,2}, Simon Linke¹, Eve McDonald-Madden¹, Robert L. Pressey^{1,3}, Susan Walker⁴, Kerrie A. Wilson¹ and Hugh P. Possingham¹

¹The University of Queensland, The Applied Environmental Decision Analysis Centre, The Ecology Centre, Brisbane, QLD 4072, Australia

²The Biodiversity Research Group, Department of Evolution, Systematics and Ecology, The Institute of Life Sciences, The Hebrew University of Jerusalem, Jerusalem 91904, Israel

³Australian Research Council Centre of Excellence for Coral Reef Studies, James Cook University, Townsville, QLD 4811, Australia

⁴Leitstone Research, Private Bag 1930, Dunedin 9054, New Zealand

Conservation efforts and emergency medicine face comparable problems: how to use scarce resources wisely to conserve valuable assets. In both fields, the process of prioritising actions is known as triage. Although often used implicitly by conservation managers, scientists and policymakers, triage has been misinterpreted as the process of simply deciding which assets (e.g. species, habitats) will not receive investment. As a consequence, triage is sometimes associated with a defeatist conservation ethic. However, triage is no more than the efficient allocation of conservation resources and we risk wasting scarce resources if we do not follow its basic principles.

Here we communicate the principles of conservation triage, highlighting the benefits of explicitly employing triage principles and its utility for all types of decision makers. We further make the case that, rather than being an ethical position, conservation triage is simply an unavoidable step in the process of efficiently allocating resources when budgets are constrained.

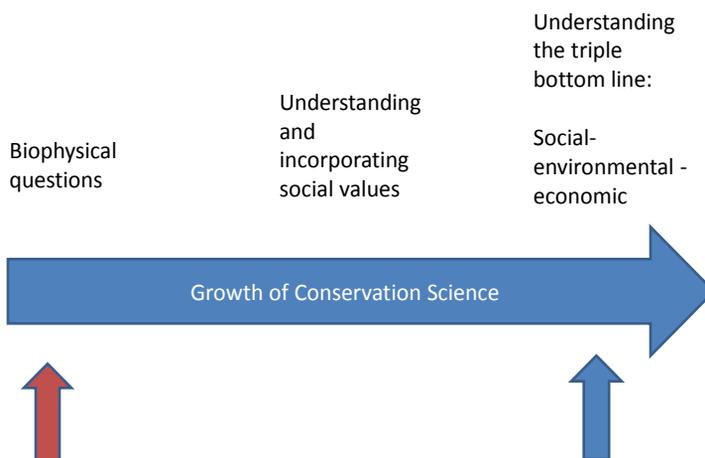
Defining conservation triage

Triage, derived from the French word *trier* meaning ‘to sort’, is a process of prioritisation [1]. In a medical context, triage is used to allocate limited resources for the greatest good for the largest number of people [10]. The treatment of

Conservation science is a young discipline



Conservation Philosophy



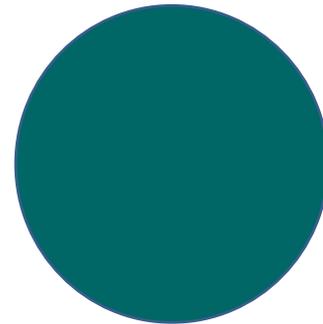
Avoid Ivory Tower syndrome



*All I need to do is
engage with the
philosophical debate
and I am
contributing to
conservation*



© fran@francartoons.com



What is conservation policy?

- Conservation policy is concerned with how we regulate human activities that affect the environment
- People achieve this through environmental laws, treaties, policies, and agreement.

29

Can conservation scientists be advocates?

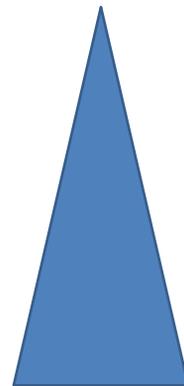
- Scientists are relied upon for neutral, credible, scientific information.
- Simple rule 1. Don't cross the line and advocate for a position that is not scientifically supported
- Simple rule 2. Conservation scientists must equally protect against the misuse of science
- Simple 3. Sitting on the fence is taking a position.



Policy decision often are dominated by business interests.
They are almost always not made by conservation scientists

Four broad conservation scientists can engage conservation policy

1. Identify novel problems
2. Identify novel solutions
3. Engage with the policy debate
4. Work with policy makers to write the policy



Four broad conservation scientists can engage conservation policy

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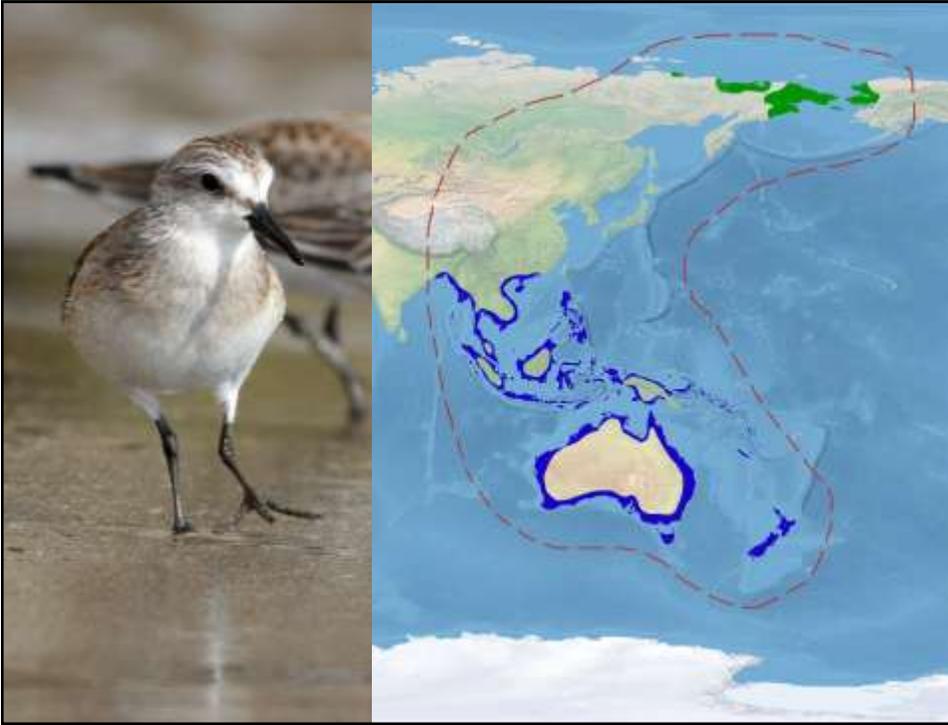
Degree of engagement/
pain

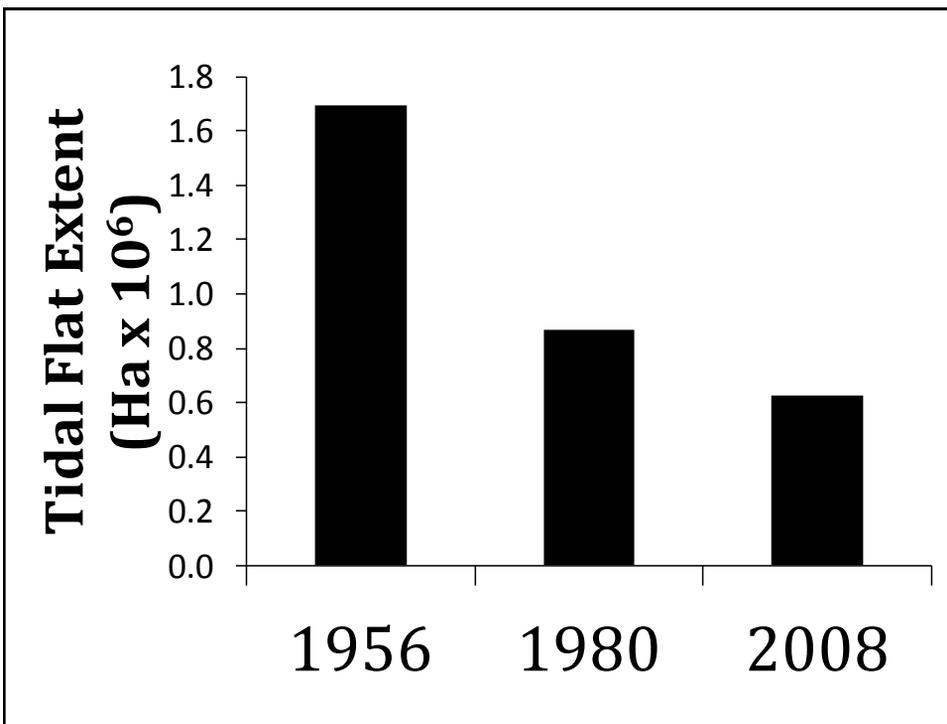
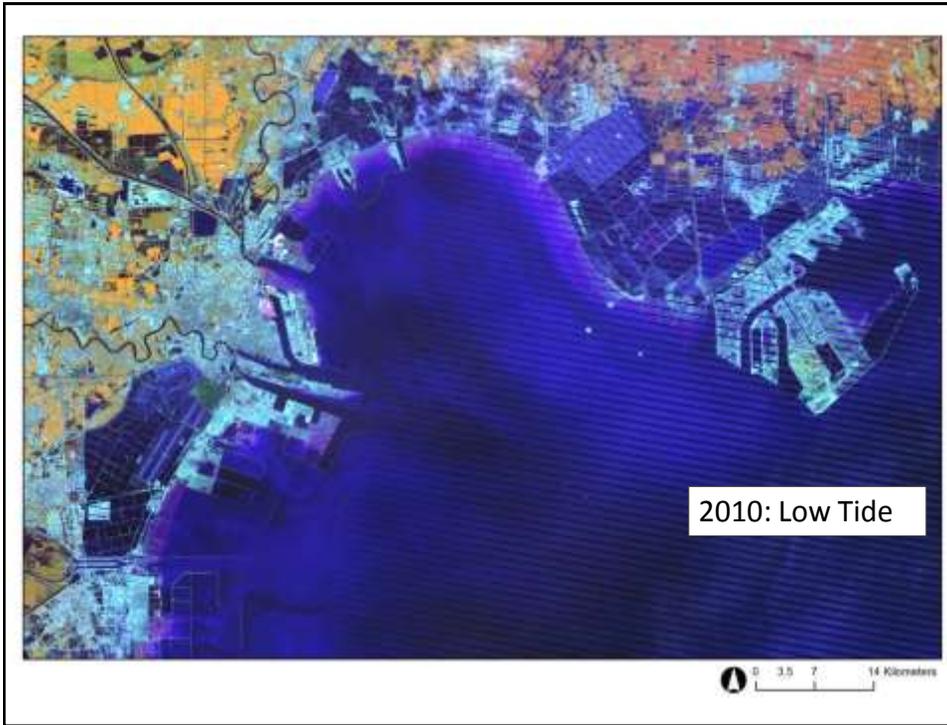
Moreton Bay's migrant shorebirds are in freefall

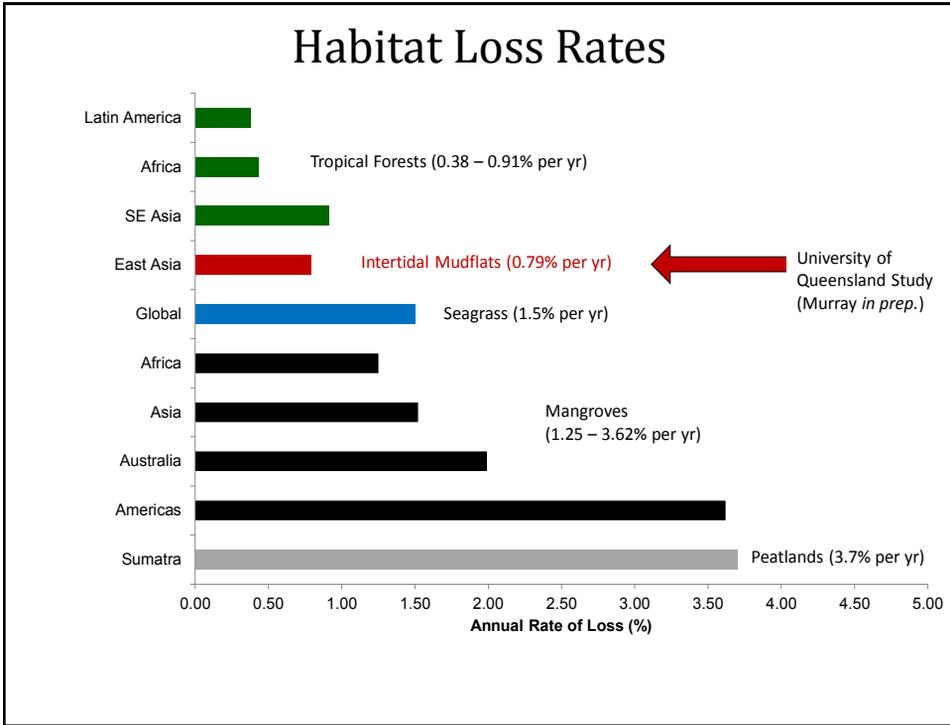
Red Knot	-8.9%
Bar-tailed Godwit	-6.9%
Ruddy Turnstone	-6.8%
Greenshank	-5.8%
Great Knot	-4.5%
Whimbrel	-4.1%

All resident species are fine









Paper published to identify the problem...more to come

Remote Sens. 2012, 4, 3417-3426; doi:10.3390/rs4113417

OPEN ACCESS

Remote Sensing

ISSN 2072-4292

www.mdpi.com/journal/remotesensing

Article

Continental Scale Mapping of Tidal Flats across East Asia Using the Landsat Archive

Nicholas J. Murray ^{1,2,*}, Stuart R. Phinn ³, Robert S. Clemens ¹, Chris M. Roelfsema ⁵ and Richard A. Fuller ^{1,2}



Working with policy makers



Identify your change agent, create the demand, communicate concisely, make it safe and let your science do the talking, and turn up

Harnessing Carbon Payments to Protect Biodiversity

Oscar Venter,^{1*} William F. Laurance,^{2,3} Takuya Iwamura,¹ Kerrie A. Wilson,¹ Richard A. Fuller,¹ Hugh P. Possingham⁷

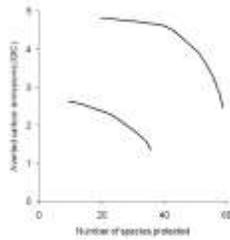
LETTER

Carbon payments as a safeguard for threatened tropical mammals

Oscar Venter¹, Erik Meijaard², Hugh Possingham¹, Rona Dennis⁵, Douglas Sheil⁴, Serge Wich⁶, Lex Hovani⁷, & Kerrie Wilson¹



REDD and biodiversity



A 8.6 species protected



B 35.7 species protected



C 119.2 species protected



Land clearing in Queensland



Getting fed up with the policy makers

The Brigalow Declaration

Tuesday 25th November 2003

On open letter to the Prime Minister John Howard and Queensland Premier Peter Beattie on the need to end the clearing of mature native bushland in Queensland

Dear Prime Minister and Premier Beattie,

We the undersigned Australian scientists write to you concerning the issue of land clearing in Queensland.

We endorse the leadership that you have both recently shown on this issue. We encourage you to implement a solution as fast as possible.



Media Release

Embargoed until 25 November 2003

ATTENTION Environment & Rural Journalists, Chief of Staff

The Brigalow Declaration

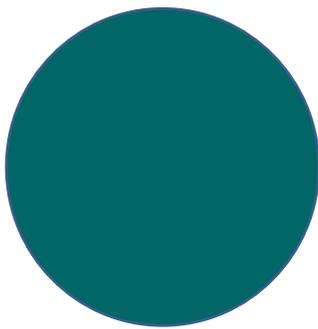
Leading scientists call for solution to land clearing in Queensland

In the most strongly supported scientific statement ever delivered to politicians in Australia about the natural environment, over 400 leading ecologists and wildlife scientists have called on the Prime Minister and the Queensland Premier in 'The Brigalow Declaration' to solve the problem of land clearing in Queensland.

The Brigalow Declaration was launched in Brisbane today by two of the signatory scientists, Professor Hugh Possingham, Director of the Ecology Centre, University of Queensland, and Professor Phil Coggan, John Evans Memorial Fellow, Australian Museum.



Victory



Revegetation Guidelines

Following the focal-species approach of Lambeck (1997), we identified the Hooded Robin as the species most sensitive to habitat area and complexity. We propose the Eastern Yellow Robin as the candidate focal species for isolation, although there were insufficient occurrences to detect a statistically significant effect of isolation. If the spatial and compositional requirements of these two species could be met, then the requirements of other bird species, limited by similar threats, should also be met. The conservation planning guidelines we derived from these two focal species were (1) conserve or create remnants at least 100 ha in size; (2) conserve or create a diverse vegetation structure (with a habitat complexity score of at least 12); and (3) conserve or establish woodland patches that are within a mean of 1.5 km of five neighboring patches.

Bring the practitioners on board early on

- Involve them from the start
- Listen to them
- Work with them
- Publish with them
- Don't neglect them

A New Zealand example

- There are ~553 species: Nationally Critical, Nationally Endangered and Nationally Vulnerable
- Only ~25 % (~142 species) of these species were managed in some way



New Zealand's DoC needed a planning process that...

- ...is appropriate, achievable and transparent
- ...can compare and prioritize effective actions
- ...involves conservancies, regions and national office
- ...facilitates ownership & commitment of the plan
- ...provides a basis for monitoring and evaluation



Conservation Biology

Contributed Paper

Optimal Allocation of Resources among Threatened Species: a Project Prioritization Protocol

LIANA N. JOSEPH¹*, RICHARD F. MALONEY² AND HUGH P. POSSINGHAM¹

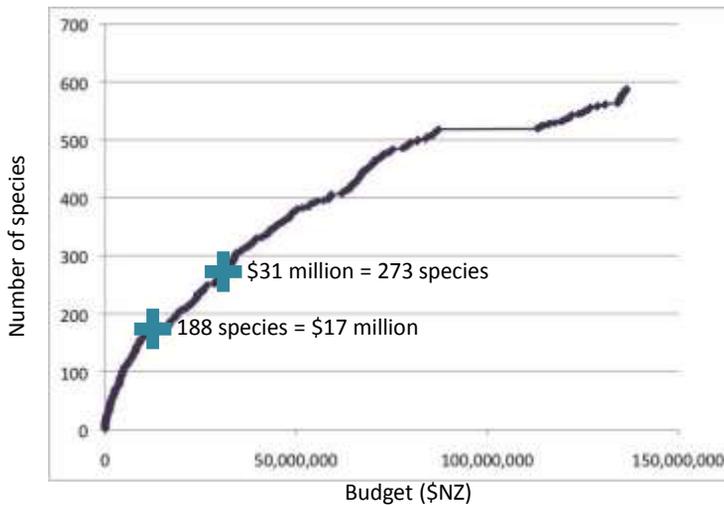
¹The Ecology Centre, School of Integrative Biology, University of Queensland, St. Lucia, 4072 Australia; ²Threatened Species Conservation, Environment and Space Unit, Research and Development Group, Department of Conservation, PO Box 28, New Zealand

Abstract: Conservation funds are globally inadequate to address the plight of threatened species. Conservation and conservation organizations must work with the goal of conserving threatened species. We present a strategy for allocating limited resources. The strategy involves identifying a species priority rating, which is based on a number of criteria, including level of endangerment and severity of species status such as evolutionary distinctiveness, ecology of importance, and social significance. These approaches give 2 critical factors: the cost of management and the likelihood that the management will succeed. These concepts will result in identification of more conservation success and possibly necessary funds. We discuss a project prioritization protocol (PPP) to optimize resource allocation among New Zealand's threatened species project, where costs benefit (including species status), and the likelihood of management success were considered simultaneously. We compared the number of species managed and the reported



Cost of management

Original spending: \$31 million = 188 species (not effectively managed)



A new marketing tool

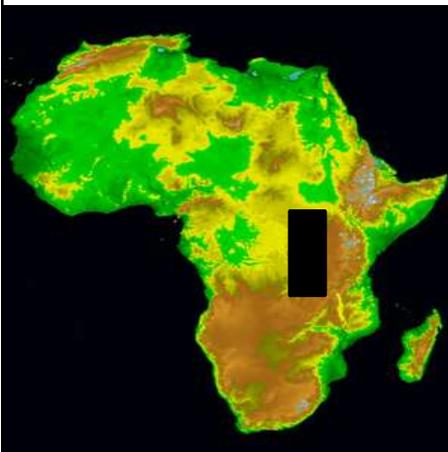
With this kind of information, statements such as these are possible:

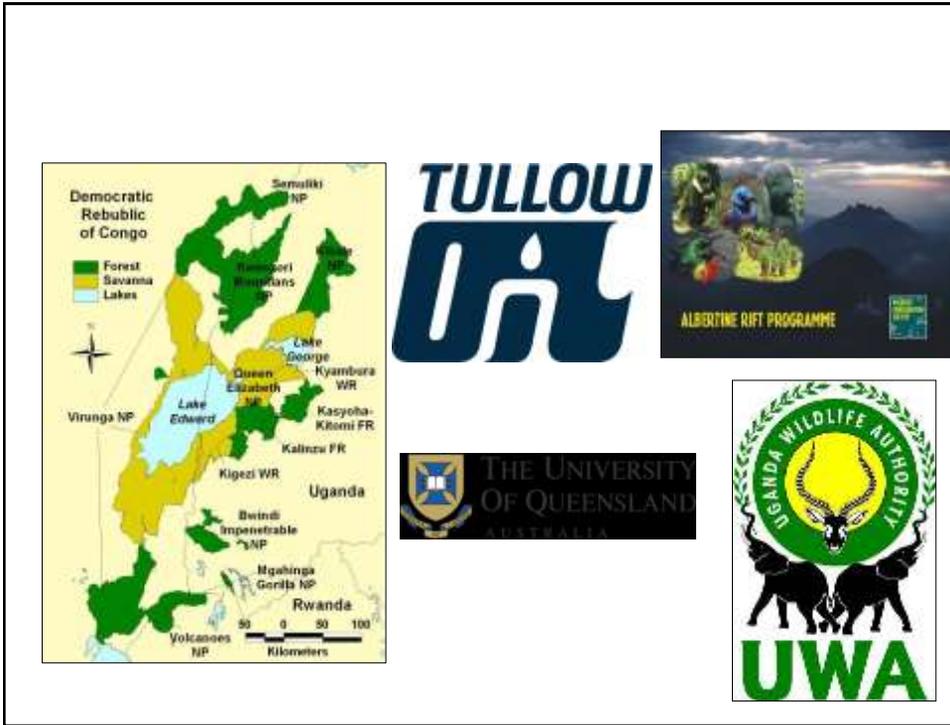
“as little as \$3 million is needed to secure 72 of the most threatened species”

and

“400 of New Zealand’s most threatened species can be secured with \$50 million/year”

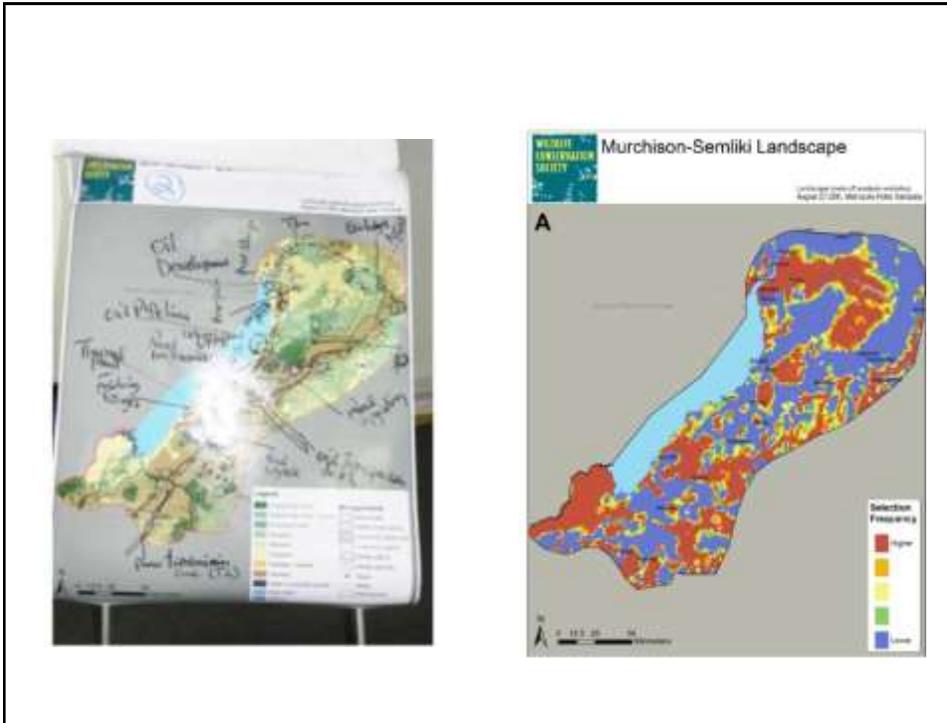
Engagement with the other 99%





Are there any win-wins?





Broad lessons

- Turn up and don't give up
- Get key people engaged early
- Patience and build long-term relationships – trust
- Be vocal and police the science
- Pick your battles but also the hill you are willing to die on
- Be effective in how you communicate

Conservation is not really about
this....



It is about this





Thanks!!!

jwatson@wcs.org