Evidence-based conservation: a need for resilient protected areas systems in a changing Era.

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Objectives and scope

Key questions for this presentation:

a) What is the role of uncertainty in conservation science?

b) How decisions in conservation are making?

c) What could be the consequences of an evidence-based approach?

d) What could be a solution?

Conservation science: driven by uncertainty...

1. Impossible to cope with all human impacts on biodiversity and ecosystem services, in all the places where they occur.

2. Impossible to predict with high certainty natural and anthropogenic changes in biodiversity and ecosystem services

3. Impossible to have management measures scientifically proven in all situations

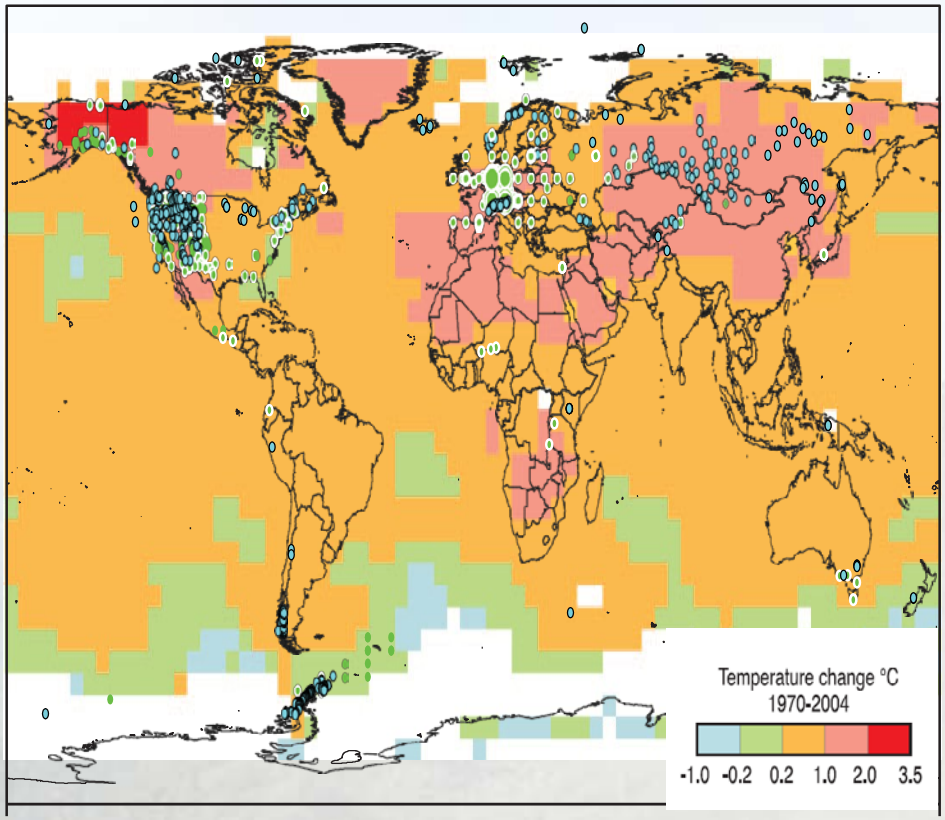
4. Impossible to take specific management measures for more than a few individual components of biodiversity - threatened species, processes such as the migration of birds

5. Impossible to measure all taxonomic biodiversity and / or directly know all functional biodiversity and the services provided

(Finegan 2010)

Global warming/Climate Change

- Climate change poses new challenges in PA management.
- Increase in uncertainty: magnitude, direction of impacts in biod unknow.
- Institutional framework should also be adjusted with new uncertainty and new data



IPCC, 2007

Some countries are developing national biodiversity strategies

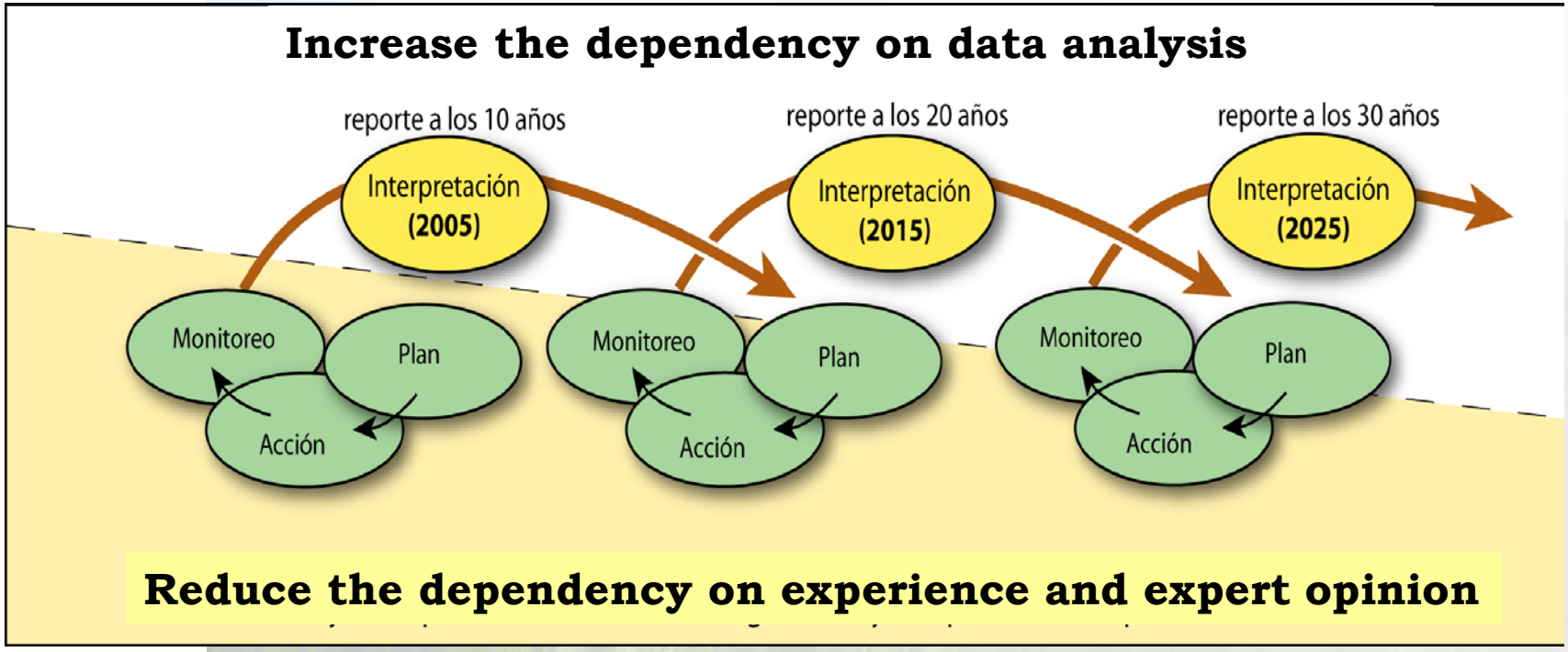
Design and management of protected areas as a mechanism for adaptation to climate change

Review and update the system of protected areas according to the studies of future vulnerability of biodiversity to climate change.

For ecosystems identified as vulnerable, develop protective measures to maintain ecological integrity and ecosystem services provision.

Develop and update tools for systematic conservation planning at different scales to incorporate climate change.

How do we make conservation decisions?



Based on personal experience, expert opinion

Source: Finegan et al 2004

Does the evidence supporting the design of conservation programs?

If the jaguar populations are increasing, what has been the role of environmental education programs in achieving that goal?

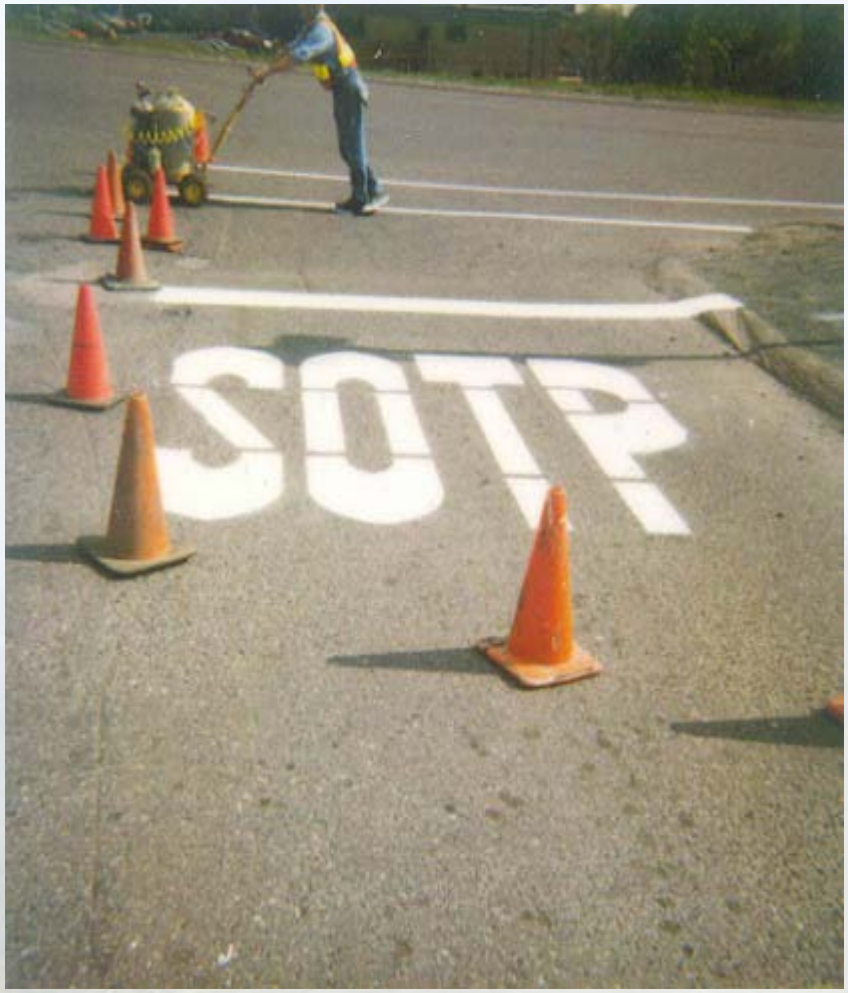
Has reduced or reversed deforestation in the major river basins of the country?

What impact has the program of Payment for Environmental Services in any reduction or reversal of deforestation in the country?

Are the goals and objectives of individual protected areas of the country being reached?

Source: Adapted from Finegan et al 2006

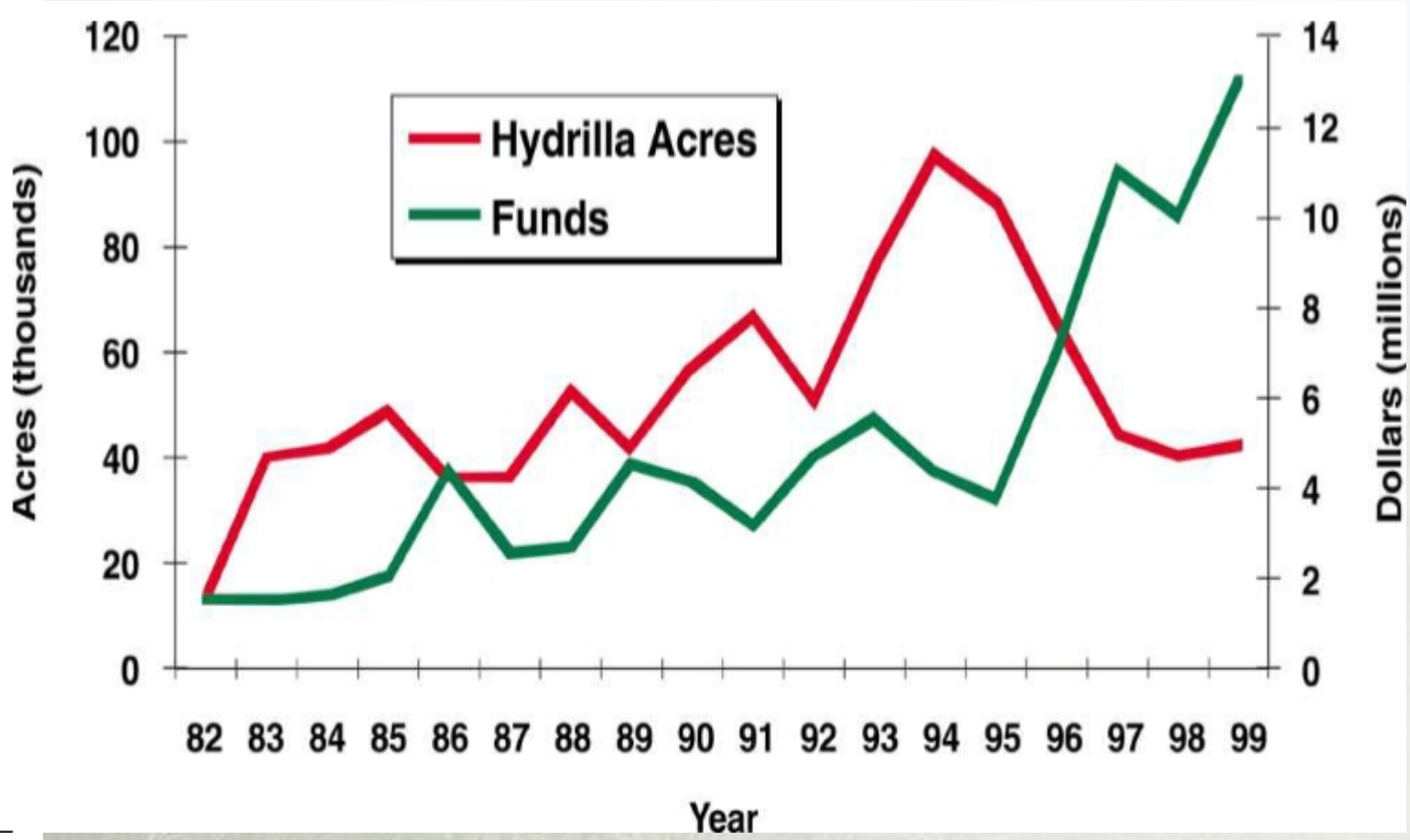
- Strategy effectiveness measures have been poorly developed
- Little evidence that conservation strategies are really working



Improvements needed

Source: Tear 2006

Lack of evidence: consequences



Fuente: FL DEP

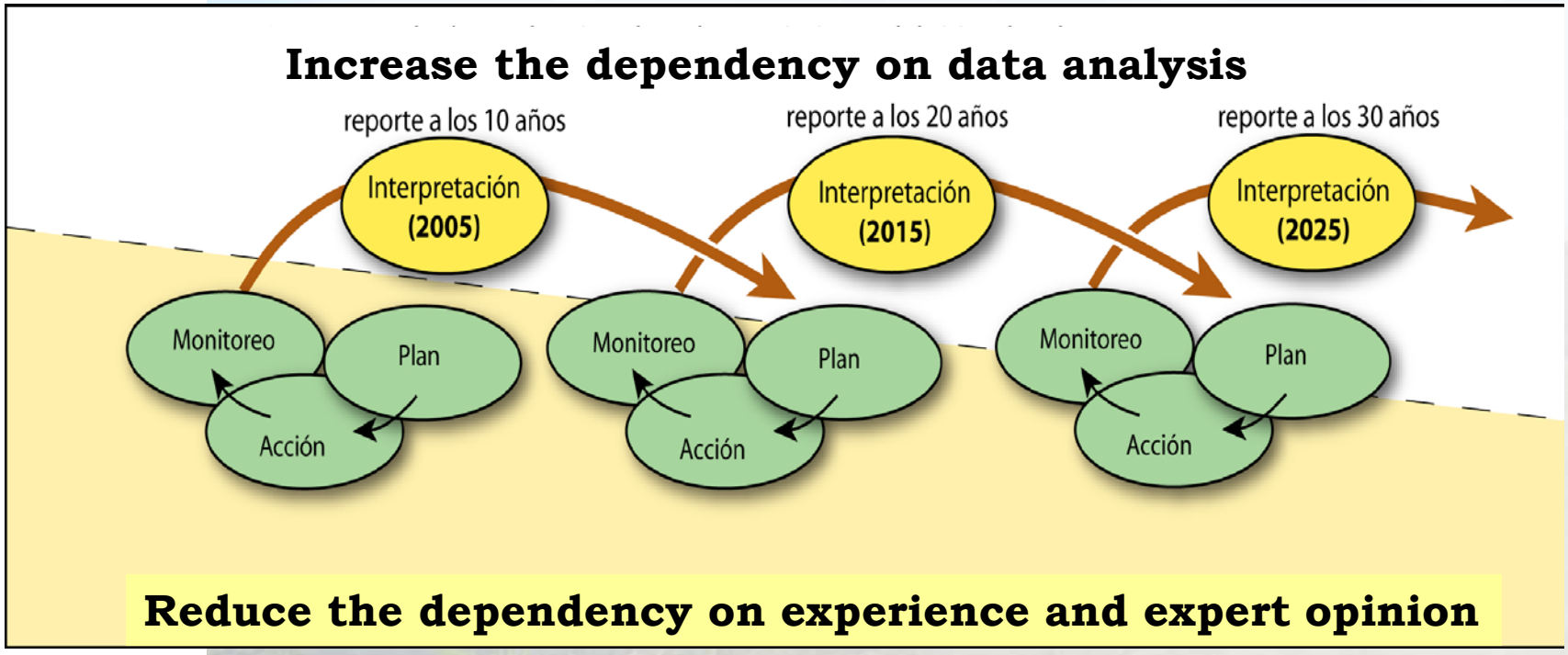
Consequences of not measuring results

- Bernhardt et al. (2005)[1]
- 37,099 river restoration projects in the United States, $14-$15 billion, <10% with any monitoring

- *"Because most project records were inadequate to extract even the most rudimentary information on project actions and outcomes, it is apparent that many opportunities to learn from successes or failures, and thus to improve future practice, are being lost."*

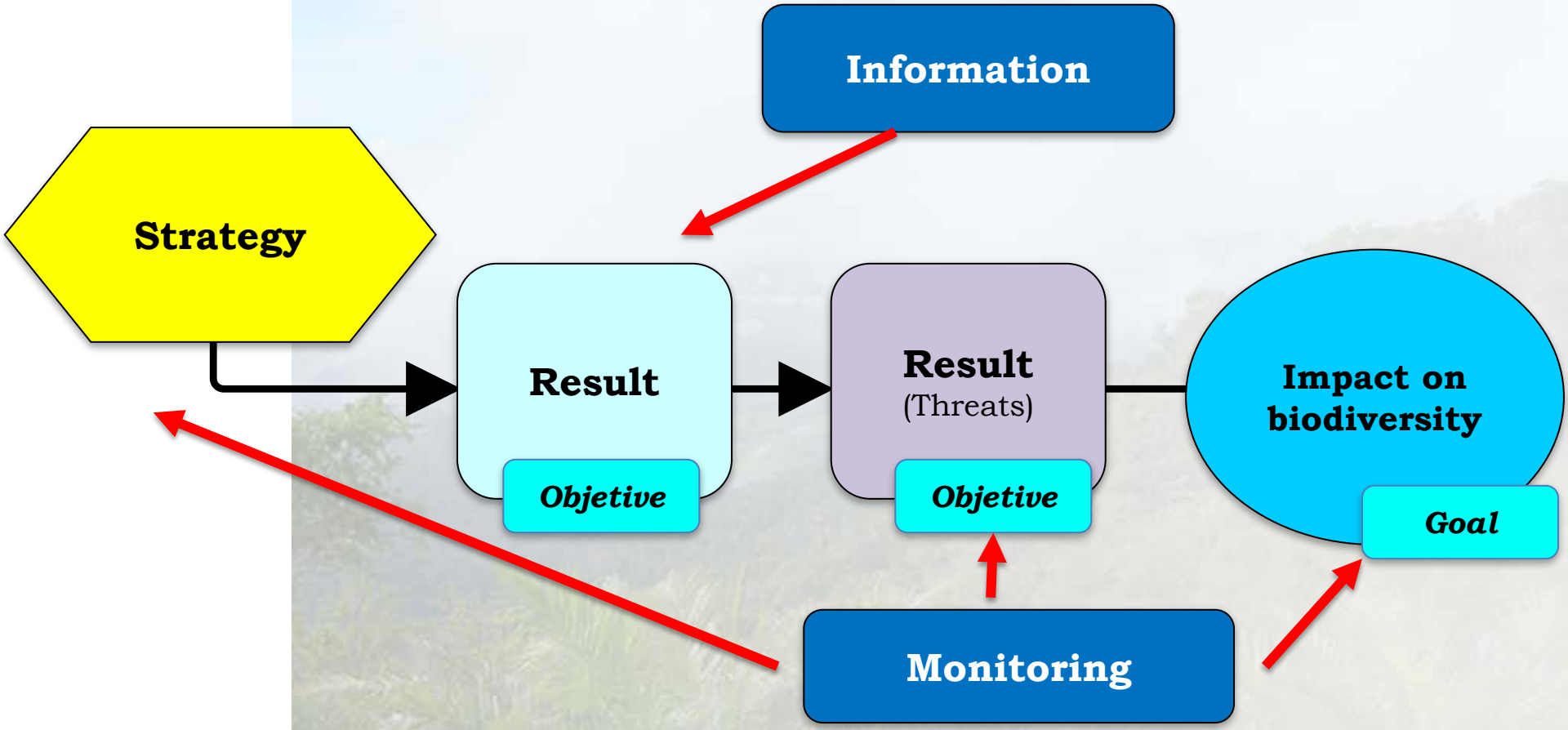
[1] Bernhardt, E.S., et al. 2006. Synthesizing U.S. River Restoration Efforts. Science 308 (5722), 636

What do we need for improving conservation decisions?



Source: Finegan et al 2004

From the strategic conservation planning point of view…



A monitoring strategy is more than indicators

1. Create scientific, technical and institutional capacities

2. Create an appropriate institutional framework for adaptive management

3. Integrate the use of evidence in the institutional culture

4. Make the information generated is used in decision-making

Source: Finegan et al 2004, SINAC 2007

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In the face of uncertainty some adjustments are required in the conservation management systems…

Review the paradigms in conservation research is required…

- Conducting coherent research programs, based on coherent and well coordinate research agendas at nation level.
- Developing research agendas based on information needs and conservation priorities.
- Prioritizing changes in conservation practice as primary reason for research.
- Changing the primary objective of information dissemination: scientific journals are not enough! For Online databases and summaries of evidence are required.

Adapted from: Pullin & Knight 2003 & other sources

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¡GRACIAS!

Thank you!

Vielen Dank!