



Collaborative Resource Management

Justin Irvine



Craigiebuckler, Aberdeen, AB15 8QH, UK

Management of wildlife resources:

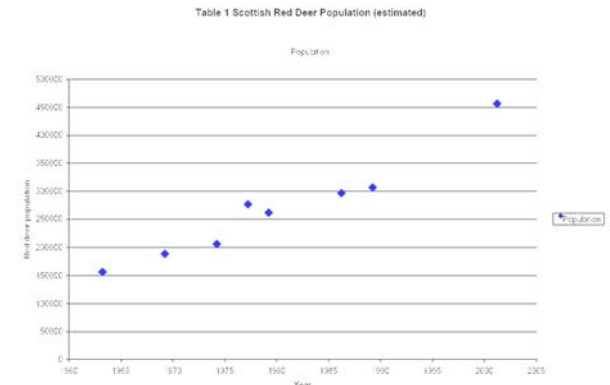
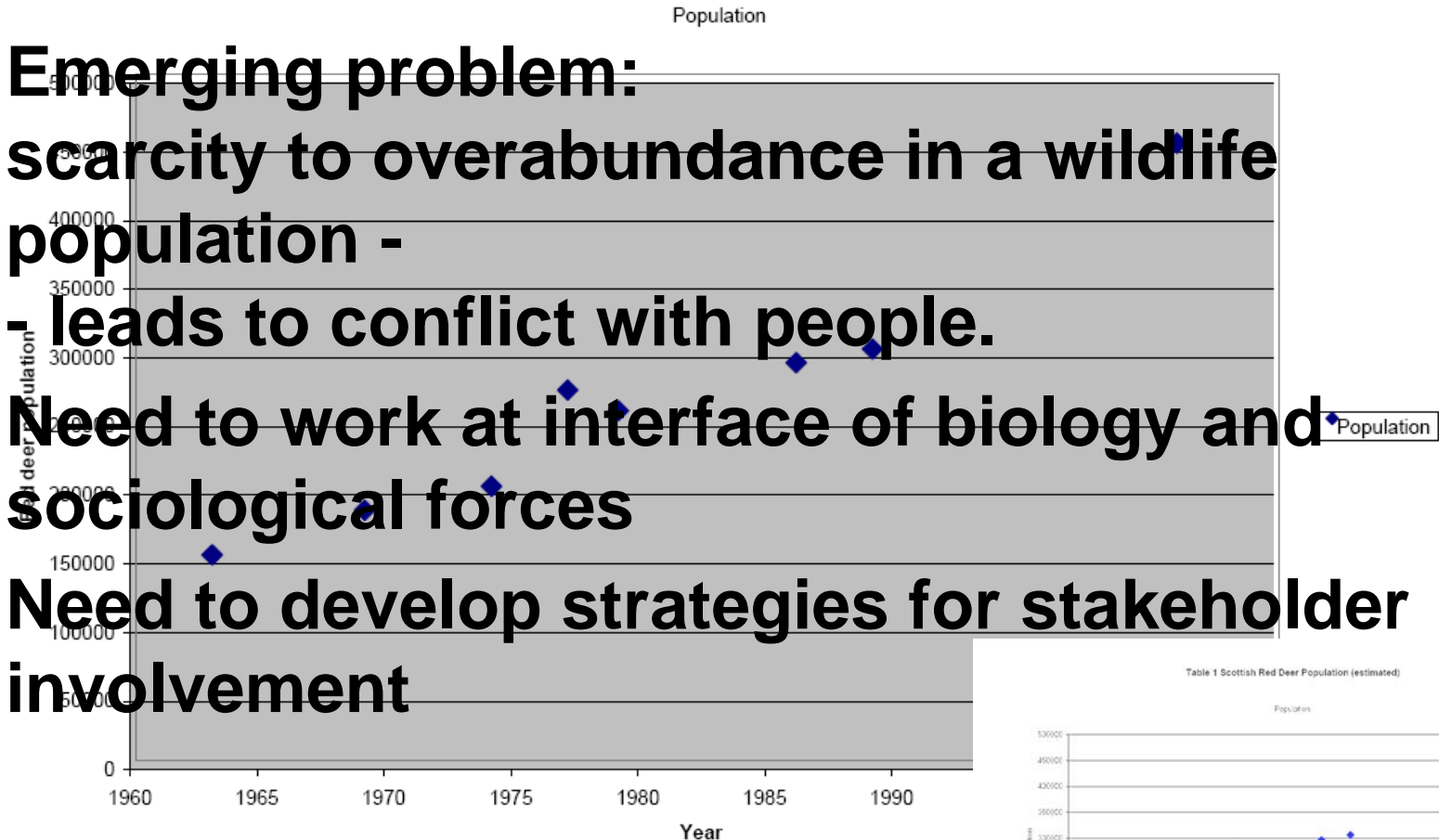
- **Approaches to wildlife management**
- **Innovations in stakeholder involvement**
- **Designing stakeholder involvement**
- **Adaptive impact management**
- **Collaborative management of deer in the UK**



Approaches to wildlife management

Table 1 Scottish Red Deer Population (estimated)

- **Emerging problem: scarcity to overabundance in a wildlife population - leads to conflict with people.**
- **Need to work at interface of biology and sociological forces**
- **Need to develop strategies for stakeholder involvement**



Approaches to wildlife management

What is the people wildlife problem?

- **People negatively impact wildlife**
- **Wildlife negatively impact on people**
- **Wildlife focussed behaviour of some people impacts on other people (value clash)**

Stakeholders have different expectations and different acceptance capacities

But beliefs can change = opportunity



Approaches to wildlife management

5 approaches

- 1. *Authoritative* (top down). Biological knowledge is most influential**
- 2. *Passive receptive*. Managers listen to stakeholders but don't actively seek input (selective and biased).**
- 3. *Inquisitive*. Systematic enquiry of stakeholders**



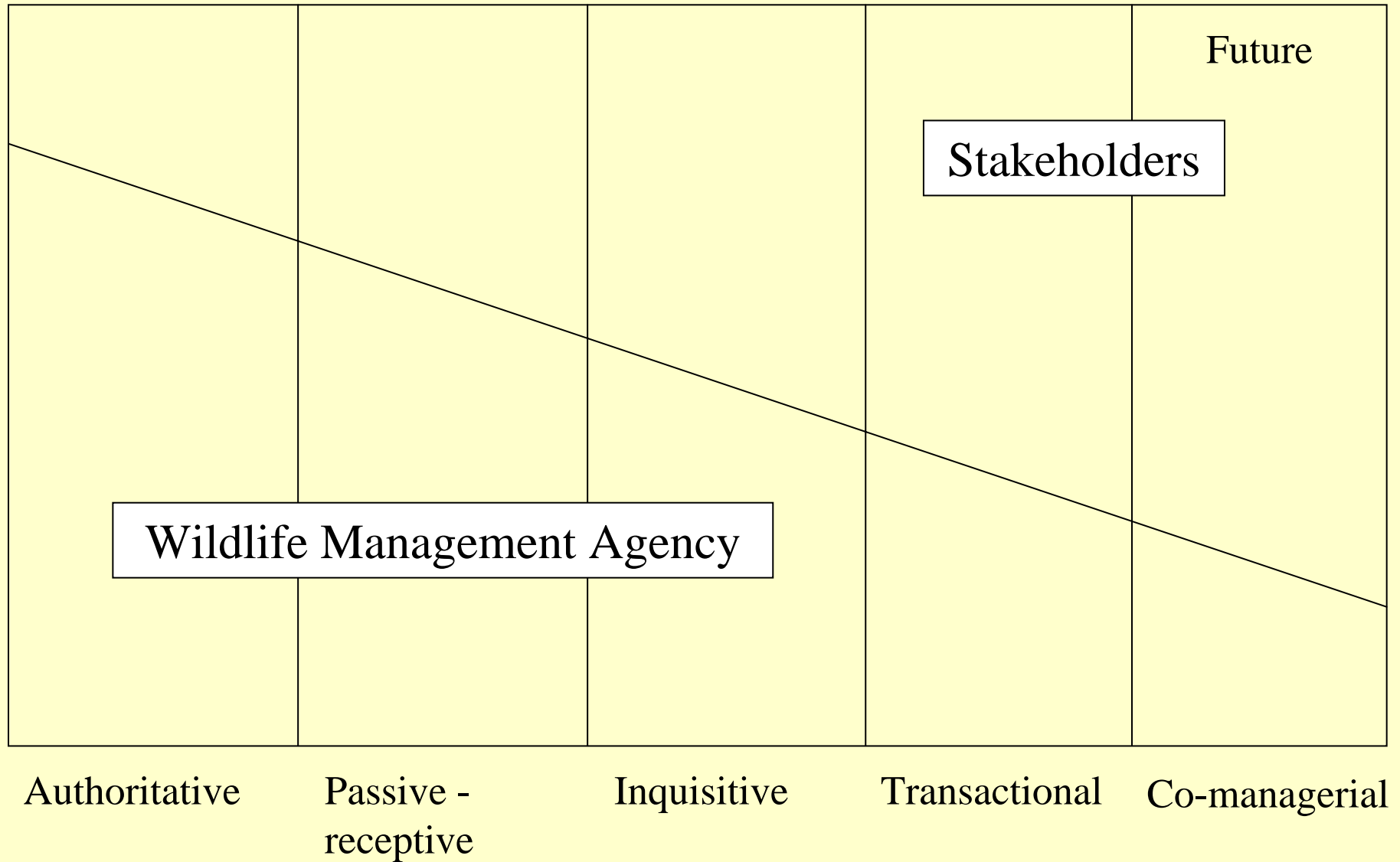
Approaches to wildlife management

4. Transactional Approach.

- **Need to weigh a breadth of likely consequences for management alternatives.**
- **Provide a forum with ground rules that allow stakeholders to deal with one another in the negotiation of weights.**
- **Manager maintains control and can intervene with biological and socioeconomic knowledge.**
- **Make decisions within bounds (e.g. designated area objectives versus non-designated areas?)**



Approaches to wildlife management

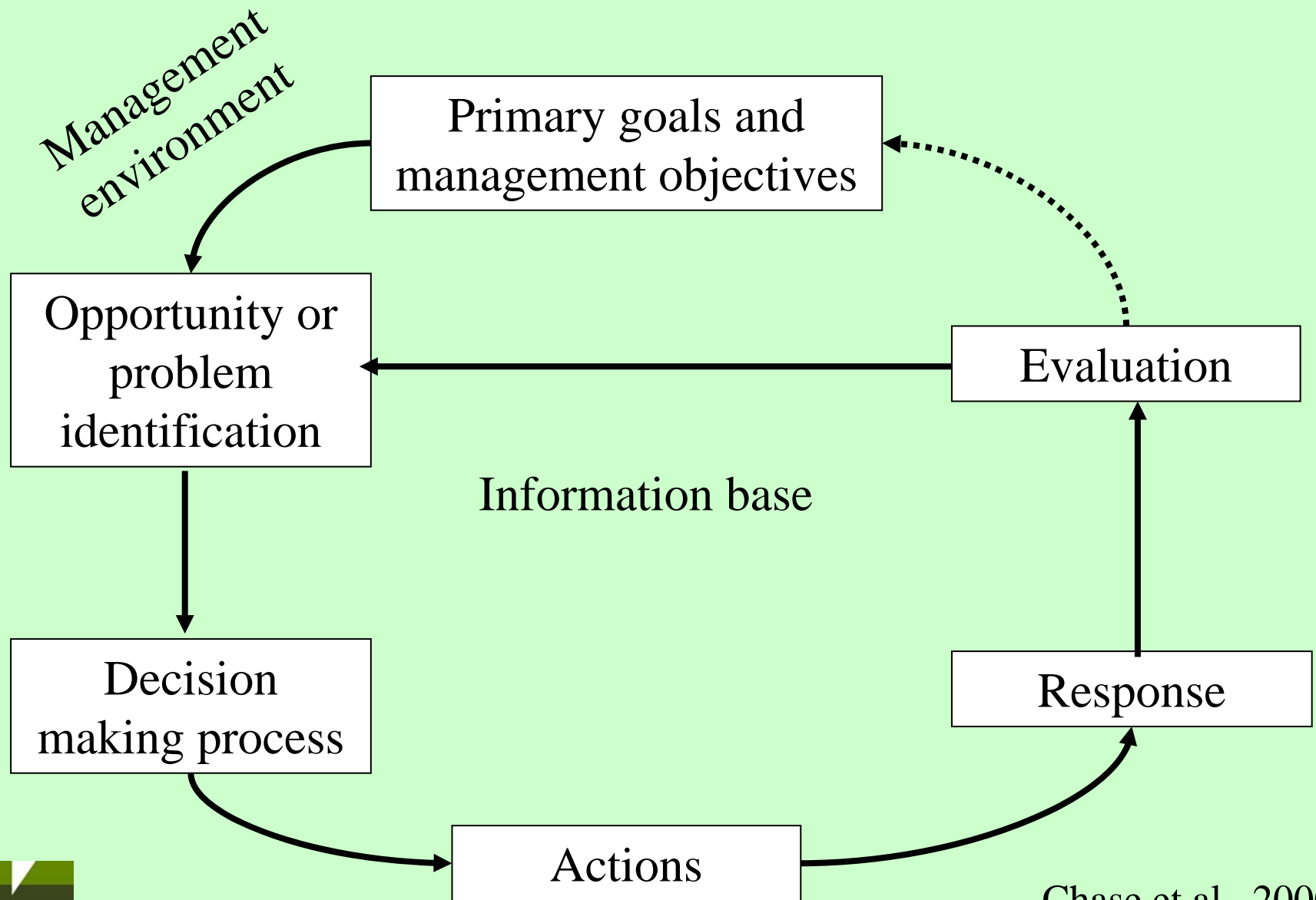


Innovations in stakeholder involvement

- 5. Co-management. Public involved in management.**
 - **Increasing public expectations for tailored solutions coupled with broader agency remits leads to reduced resources and personnel.**
 - **Delegate authority to stakeholders.**
 - **Need professional management team (but avoid decisions based solely on stakeholder preferences).**



Innovations in stakeholder involvement



Chase et al., 2000



Co-management (collaboration, negotiation, consensus, cooperation)

- **Collaborative-management is a partnership in which government agencies, local communities, non-governmental organisations and other stakeholders negotiate, as appropriate to each context, the authority and responsibility for the management of a specific area or set of resources**



Collaborative management

- **By gaining a greater understanding of the issues around resource management and recognising the interests of others, stakeholders identified a common purpose to guide management actions and develop relationships**



Collaborative management

Specific benefits

- **Mechanisms to resolve conflicts**
- **Mechanisms to reduce costs of enforcing regulations**
- **Improve data quality & credibility of results**
- **Improve relationships**
- **Enhanced legitimacy of management decisions**



Collaborative management

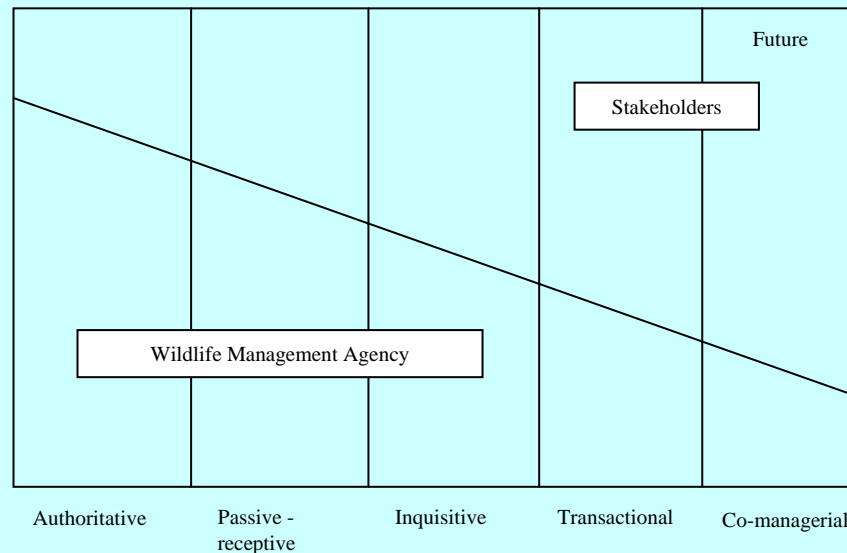
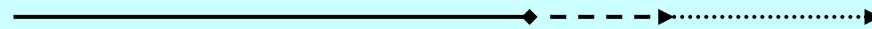
Challenges

- **Initially, considerable time and resources input to develop stakeholder capacity**
- **Who should participate?**
- **What geographic scale?**
- **Understanding how political and socioeconomic contexts affect each situation**
- **More powerful interests co-opt less powerful**



Designing stakeholder involvement

- If there is (emerging) controversy about the management of a resource then how far along the stakeholder involvement gradient do we want to go?



Designing stakeholder involvement

Step 1. Understanding the situation

- **Discuss with local managers**
- **Interview stakeholders**
- **Develop structured surveys for assessing residents views for involvement in participation (interests, concerns, attitudes, preferences for personal involvement)**



Designing stakeholder involvement

Step 2. defining agency objectives for stakeholder involvement:

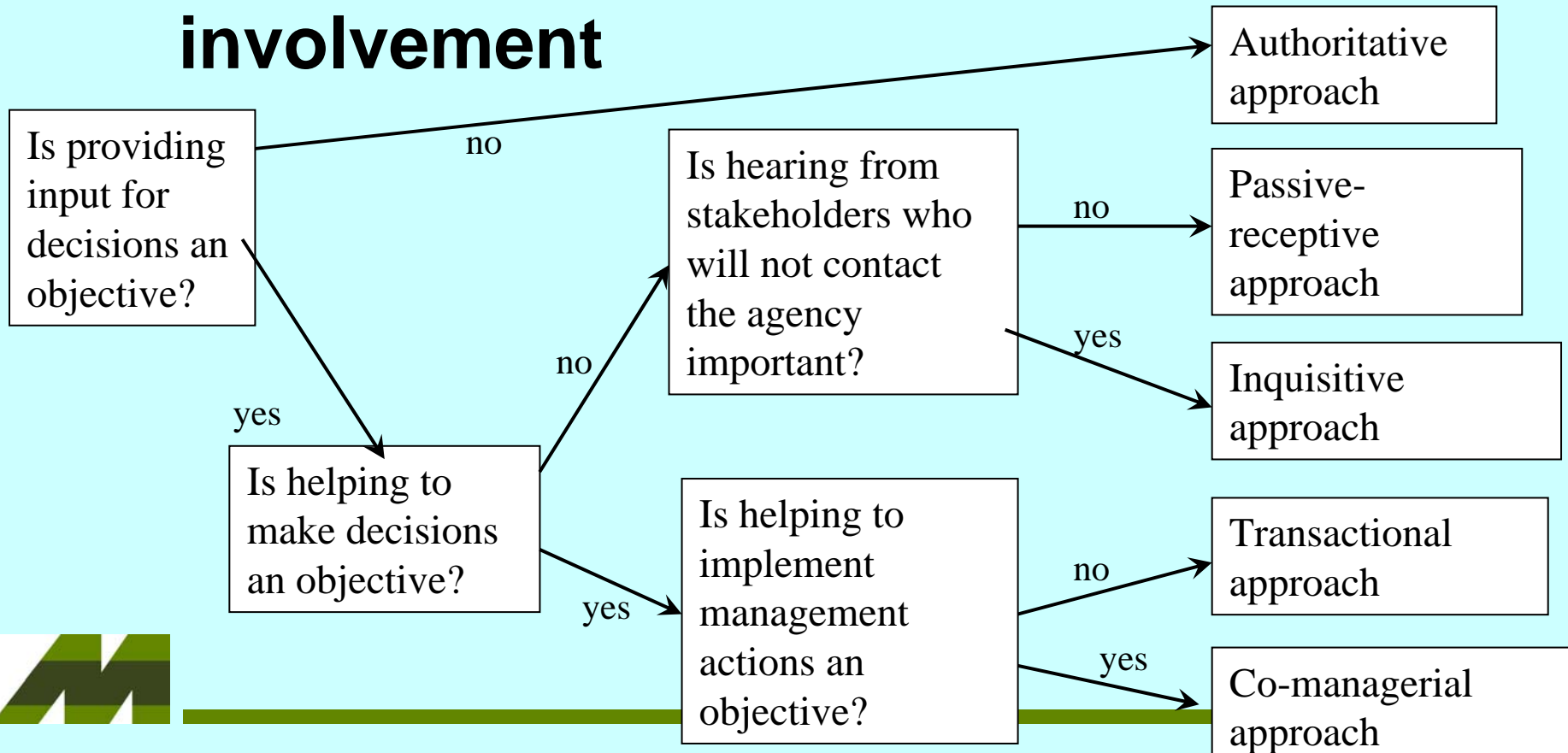
- To improve management climate
- Provide input into decision making
- Help make decisions
- Help implement management actions



Designing stakeholder involvement

Step 3. Selecting a stakeholder involvement approach.

- Depends on the aims for stakeholder involvement



Designing stakeholder involvement

Step 4. Designing a context specific stakeholder involvement strategy

- Based on survey questionnaire analysis
- Study in NY state on white tailed deer showed that stakeholders wanted a process:-
 1. based on scientific information,
 2. with a genuine influence on decision making,
 3. that treated all stakeholders equally (not weighting)
 4. promoted communication and education.



Adaptive Impact Management (AIM)

- **The need to manage wildlife results because wildlife have impacts on the values of stakeholders.**

What are impacts?

- **Beneficial or detrimental effects resulting from or interactions involving humans and wildlife**
- **Impacts are effects that warrant management attention and are defined and weighted by human values**
- **Scientists & managers identify effects, stakeholders apply values to determine impacts**



Adaptive Impact Management

- **Management of impacts requires decision making.**
- **AIM incorporates a value based decision making approach by focusing on stakeholder defined impacts as the objects of management.**
- **4 steps**



Adaptive Impact Management

Step 1. Situational Analysis

- Who is involved?
- Broad statements of intent or purpose.
- Identifies relevant impacts and describe management environment in which impacts occur.



Adaptive Impact Management

Step 2. Definition of goals and objectives

- **Fundamental: management needs in terms of stakeholder-derived impacts**
- **Enabling: means (and alternatives) for achieving fundamental objectives**
- **Necessary trade-offs between objectives identified**



Adaptive Impact Management

Step 3. Development of system models

- **Explicit vision of the system to be managed**
- **Shared model development promotes common understanding**
- **Forecast effectiveness of management actions**
- **Evaluate trade offs alternatives & uncertainty**



Adaptive Impact Management

Step 4. Identification of alternative management intervention.

- **Fundamental objectives become performance measures**
- **Adjustment to management models**

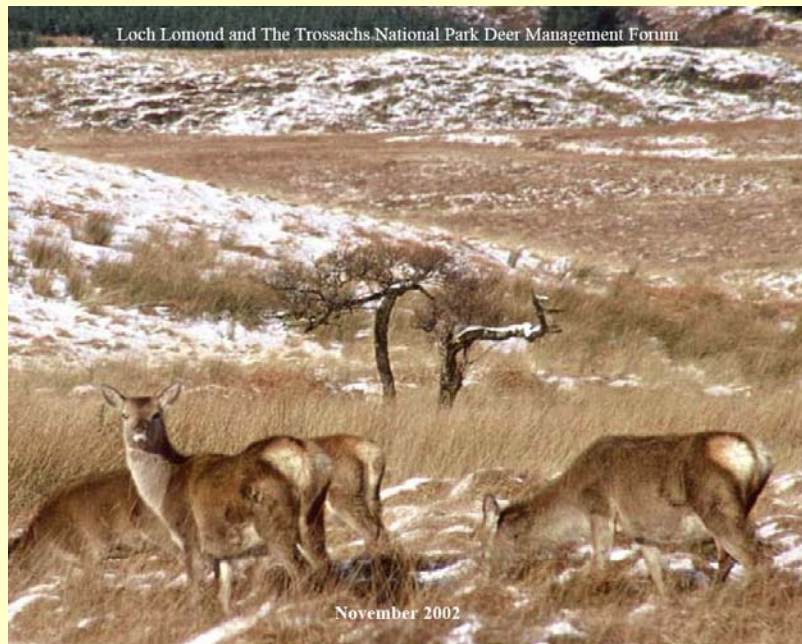


Collaborative Frameworks in Land Management: A case study on integrated deer management

- **Can stakeholder collaboration enhance the efficiency with which benefits of ecological resources are captured?**
- **What are the barriers that hinder collaborative resource management & how can they be overcome?**



Resource or pest



DEER MANAGEMENT AS A MODEL SYSTEM

Deer

Controversy over the management of deer due to increases in deer numbers & range expansion.

This has led to changes in the direct & indirect costs & benefits to a wide range of stakeholders across society.

- increases in road traffic accidents,**
- economic losses to forestry, agriculture & horticulture,**
- damage to biodiversity interests,**
- potential risks to public health**
- un-realised potential for income generation from stalking & venison production and tourism.**





The police recently reported 12 deer carcasses on the roadside over a period of 10 days. *Erlend Barclay, Deer Commission for Scotland (2005)*



New figures show deer are involved in about 15,000 incidents per year on Scotland's roads. *RAC, 2004*

Night-time marksmen to cull deer on A9 after spate of accidents. *Scotsman, 12/2005*





Call for bigger cull
to check rise in wild
deer numbers,
Telegraph, 11/2002

Soaring deer
population puts
wildlife under threat
Telegraph, 02/2002

This rising number has to be addressed as it has implications for everyone who works, lives and enjoys the wildlife in rural Scotland. *Pete Mayhew RSPB Scotland (2003)*



DEER MANAGEMENT AS A MODEL SYSTEM

Deer related stakeholders

- **Collaboration initiatives among stakeholders are readily found across the UK.**
- **Stakeholders are drawn from all sectors of society & display a wide range of values, concerns & perceptions.**
- **Deer management occurs across a range of locations that are highly diversified in terms of habitat & socio-economic context.**
- **Reform of land-use policies (e.g. CAP) will impact on deer management and will influence the sustainability of rural economies.**



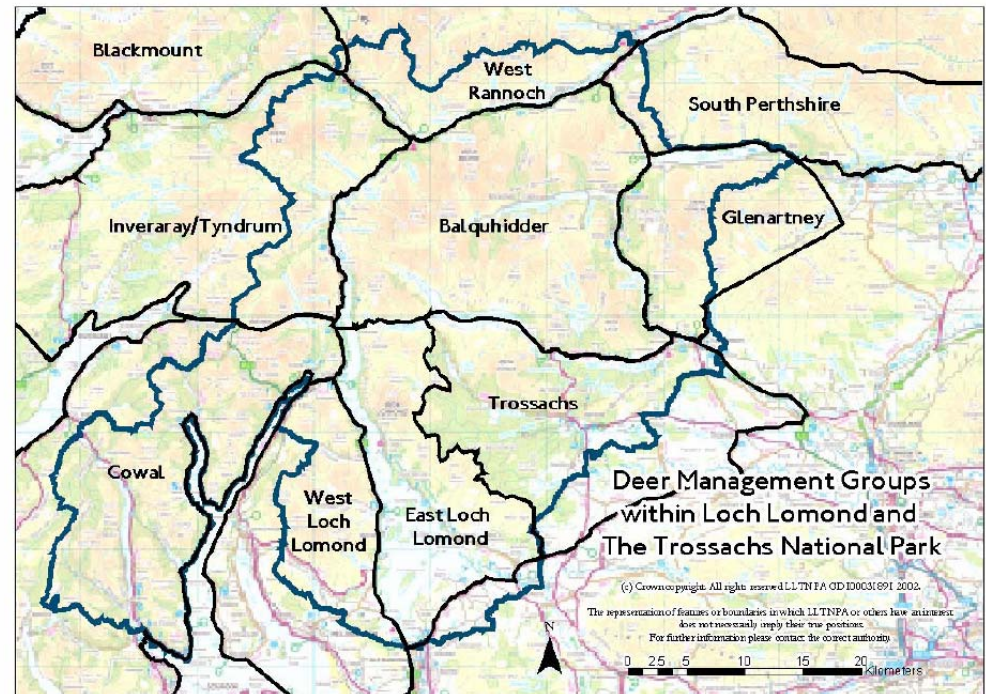
DEER MANAGEMENT AS A MODEL SYSTEM

For example: Loch Lomond and Trossachs National Park

Deer management forum set up to inform National Park Policy

Made up of members from Deer Management Groups and others

Aim: To promote the sustainable management deer



DEER MANAGEMENT AS A MODEL SYSTEM

Stakeholders recognise that understanding the interaction between the ecological and the socioeconomic value is fundamental to achieving sustainability

But barriers such as the lack of integration among scientific disciplines & poor communication between researchers, policy makers & practitioners need to be overcome.



SPECIFIC OBJECTIVES

1. Investigate stakeholder characteristics & goals in relation to deer management & assess current relationships, barriers to collaboration & gaps in knowledge (AIM situational analysis and definition of goals).
2. Investigate novel methods for integrating ecological, economic & social knowledge & feed this integrated information into the collaborative process (AIM development of system models and alternative management intervention).
3. Develop a framework for collaborative management & integrated information flow across a range of scales & review its application in the management of other rural resources.



Collaborative Resource Management

- **Premise: collaboration can enhance the management of ecological resources to the benefit of rural economies, taking into account the interaction between social, economic and ecological factors.**
- **Applying collaborative management to a resource may increase agreement between stakeholders**
COMMON PURPOSE.
- **Stakeholder involvement in decision making (and management actions) can lead to more sustainable resource management** COLLABORATIVE RELATIONSHIPS
- **Other prerequisites for joint action – capacity building, appropriate process & structures, supportive policies**

