

# Understanding & managing wildlife conflicts



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# Theme 4 – Understanding & managing biodiversity conflicts (Steve & Henrik)

- Mon AM. Overview – Steve
- Thurs AM. Norwegian carnivore conflicts – John
- Thurs PM. Workshop on values, science & conflict – Steve & John
- Fri AM. The John DC Linnell Inspirational Talk

Theme meetings – deciding future direction



# Human-Wildlife conflicts





# Fennoscandia



# General approach to studying conflicts I



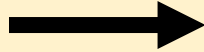
Better  
Science  
(Ecology – patterns  
& mitigation to reduce  
impact)

# General approach to studying conflicts II

Information  
deficit  
model



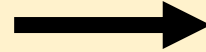
Better  
Science  
(Ecology – patterns  
& mitigation to reduce  
impact)



Change  
behaviour  
(Education)



Improve  
policy  
(Evidence-based)



Improved  
management

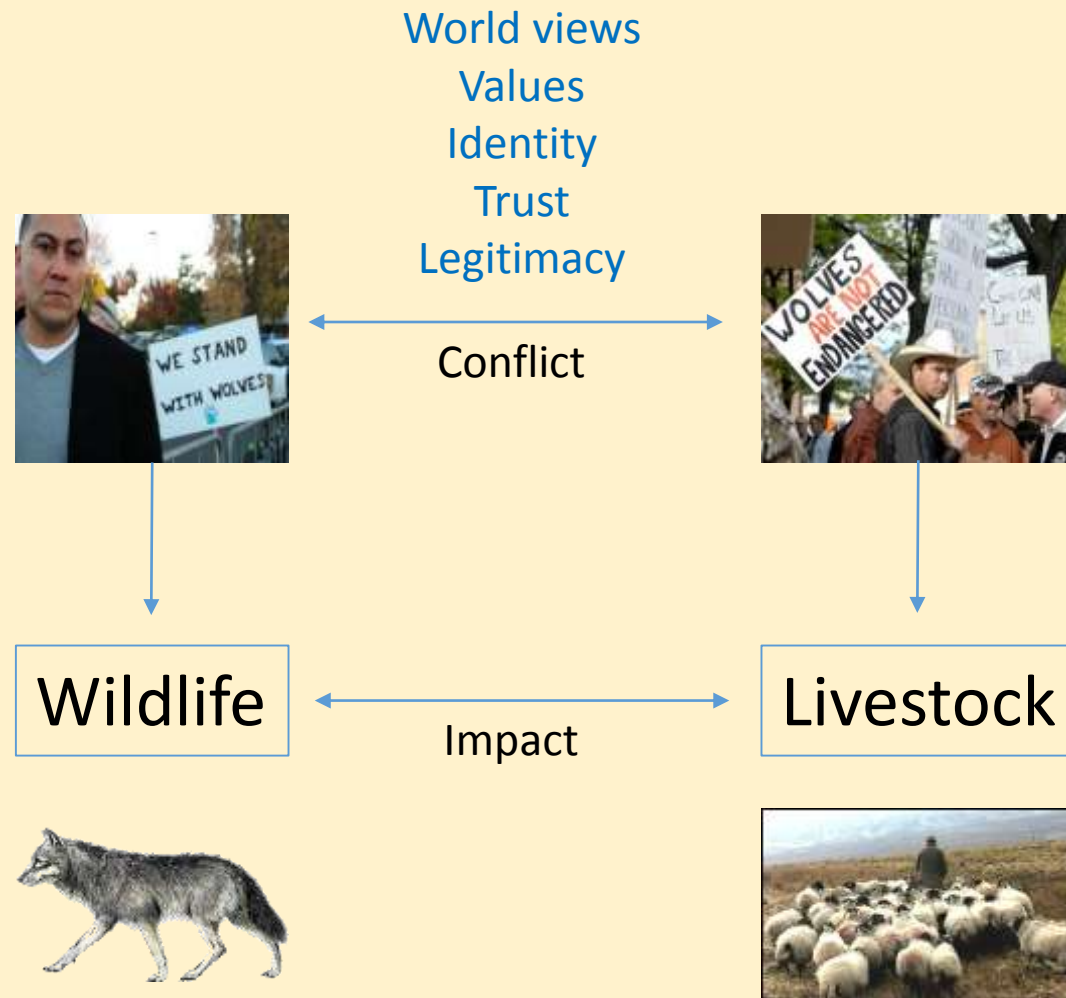
This doesn't work

# General approach to studying conflicts III

- We seek resolution / win-win solutions



# What are wildlife conflicts?



Social conflicts

Human-wildlife interactions



# Definition

Occur when strongly-held positions clash over objectives and when one party is perceived to assert its interests at the expense of the other.



# Conflicts are damaging and costly

They have an impact on:

- Human life
- Livelihoods
- Wellbeing
- Hidden costs
- Conservation
- Relationships between individuals and organisations



# Conflict



Livelihood  
outcome

Win

Lose

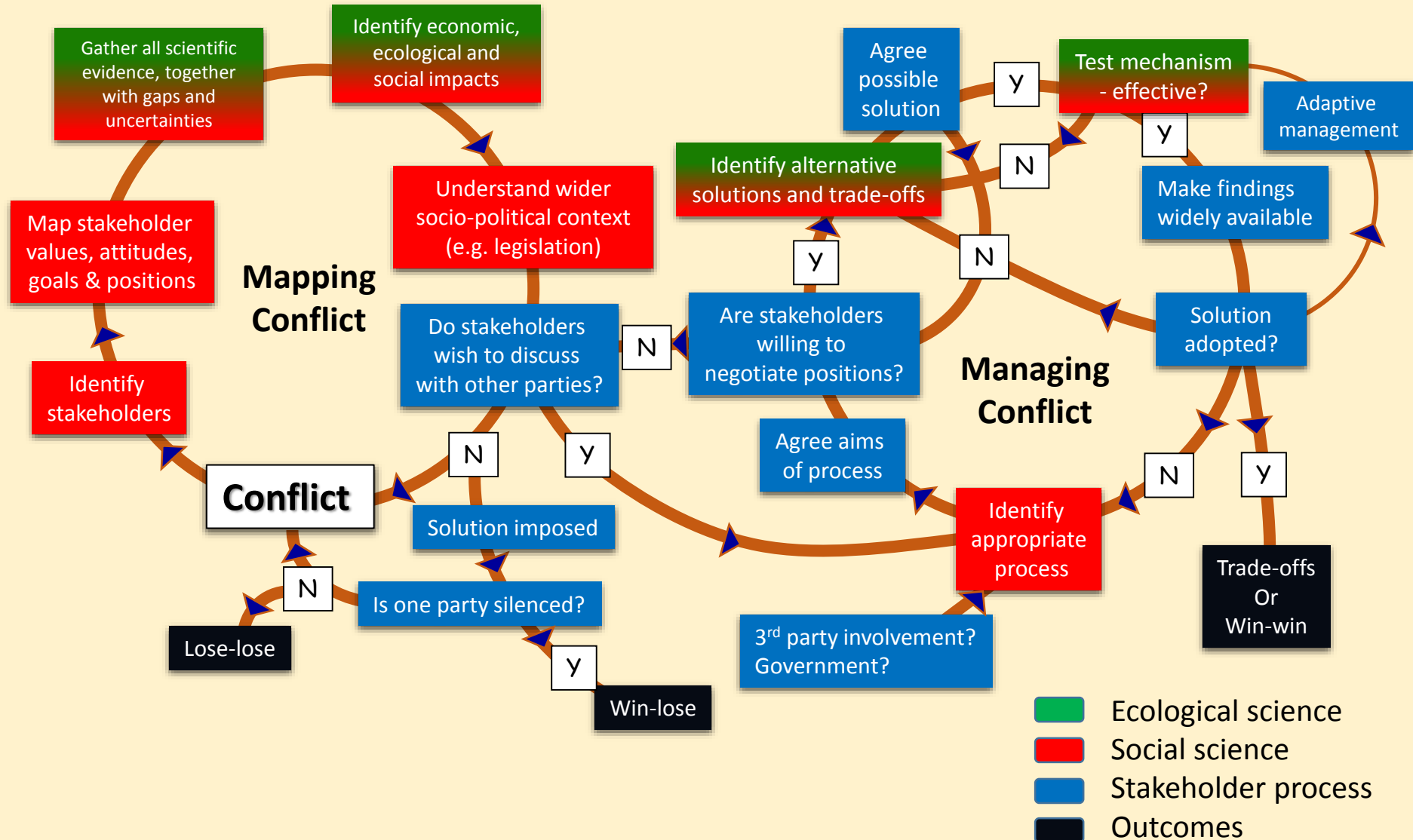
Lose

Win

Conservation outcome

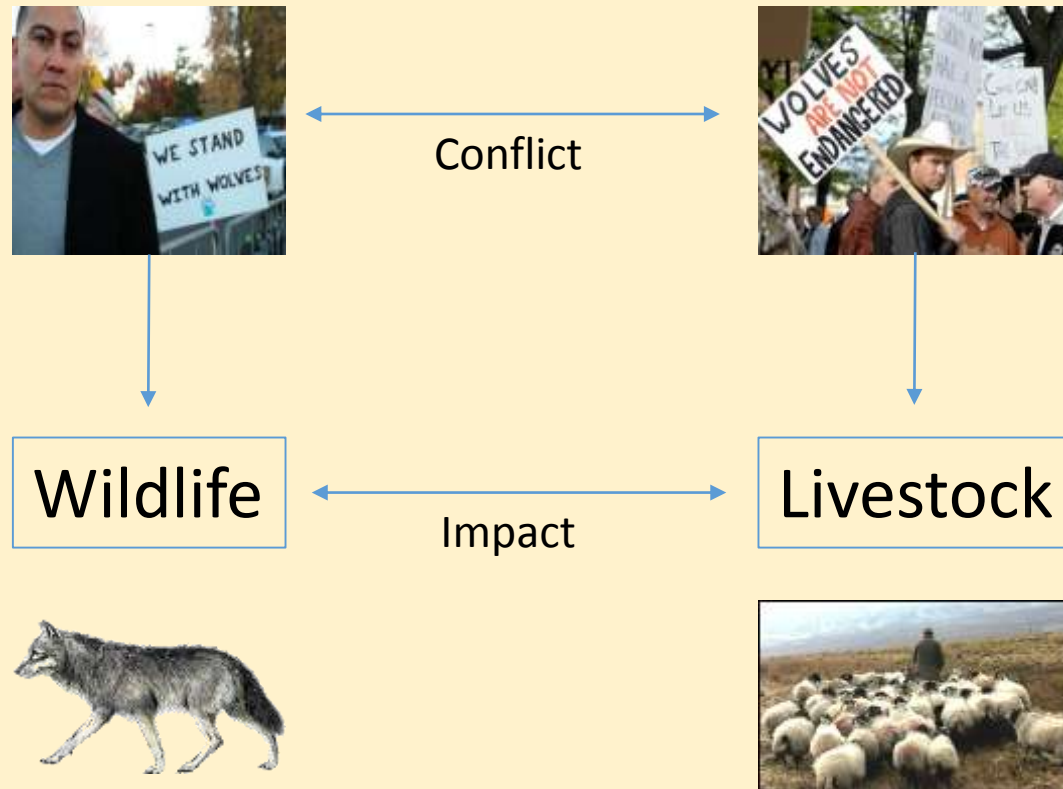


# Understanding & managing conflicts





# What sort of research do we need?



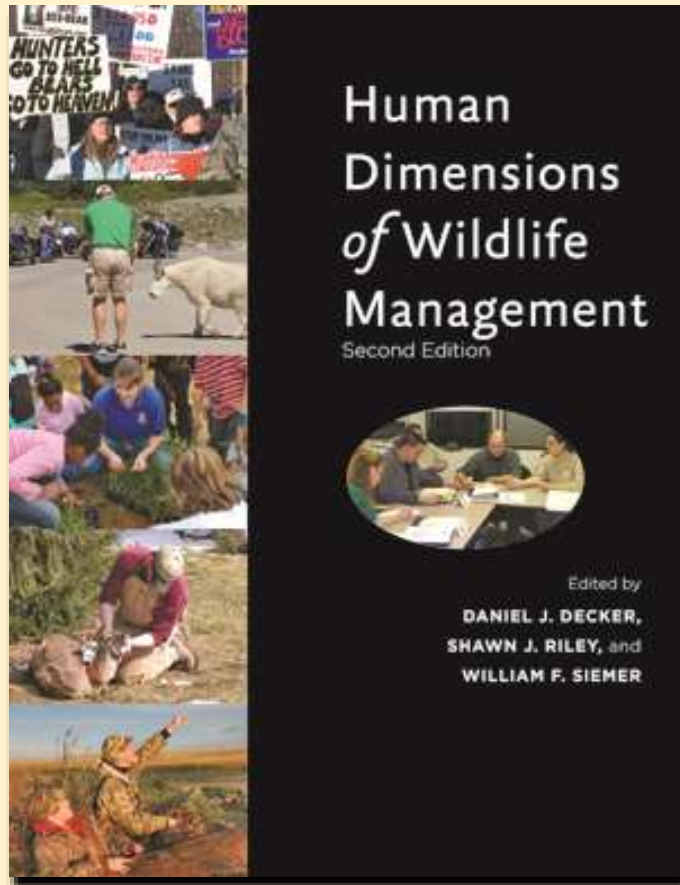
Political Science  
Psychology  
History  
Law

Economics  
Ethics

Natural science

# Wildlife conflicts





“A field of research and application that aims at describing, understanding, predicting and changing human thoughts and actions towards wildlife”

# We need inter-disciplinarity

*“Inter-disciplinarity is for those academics who have failed in their single disciplines”*

**Principle of UK University**

*“Don't get too sucked into those dark social science spheres, those tepid waters may seem inviting but remember its mostly pee.”*

**Senior ecology professor, New Zealand**



# Linking academic disciplines is not enough.

Why?

- People feel excluded from science & ignore or dismiss it
- People's understanding based on different knowledge – eg experience
- People are not easily persuaded by facts and evidence
- Policies and decisions are based on more than science
- Scientists often ignore other forms of knowledge

# Sea eagles & lambs in West Scotland



**Marquiss et al (1999):**  
“The predation of lambs by [White-tailed Eagles]...could not have been damaging to sheep farming..”



**Farmer: “[Eagles] are taking 6% of stock...if something is not done, you may well end hill farming...”**



## Farmers angry at sea eagles' cull of lambs

SEA eagles take so many lambs that hill farmers may have to give up keeping sheep.

By NICK JEDRZEJEWSKI

PUBLISHED: 00:01, Fri, Mar 21, 2014

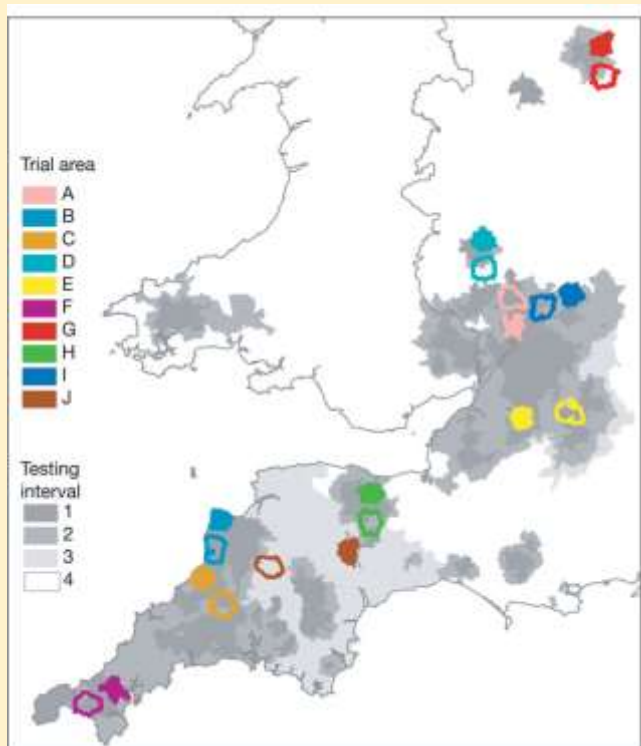
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Argyll hill-farmed lambs are frequently the prey of sea eagles [ALAMY]



# Badgers & bovine<sub>tb</sub> in UK



Bourne et al (1998)  
“.. badger culling can  
make no meaningful  
contribution to  
cattle TB control in  
Britain.”

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## Badgers

### Badger cull areas more than triple under new government licences

Ten areas now licensed for culling, with Herefordshire, Cornwall and Devon added to Gloucestershire, Somerset and Dorset

Adam Vaughan and Damian Carrington  
Tuesday 30 August 2016 10:16 BST

This article is 1 month old

Shares 689 Comments 266

Save for later



Seven new badger culling licences have been issued, up from three, and licensed shooters could begin killing badgers within days. Photograph: Ben Birchall/PA

The number of areas where badgers will be culled to stop the spread of bovine tuberculosis is to more than triple under licences issued by the government on Tuesday.

Licensed shooters could begin killing badgers within days in Herefordshire, Cornwall and Devon, which have been added to the culling already taking place in recent years in Gloucestershire, Somerset and Dorset.

Ministers say the culling is essential to stop the spread of bovine TB to cattle, which cost the taxpayer £100m in 2015 to compensate farmers for slaughtered cattle. But experts have said the culls “fly in the face of scientific evidence” and could even make the problem worse.

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# Scientists often ignore other knowledge



"Our studies show that bears hibernate half the year and feed mainly on blueberries during the other half, it is not likely that they cause major losses for the reindeer herding"

*Jon Swenson, Brown bear researcher.*

"We do not know the exact reason for the increased losses over the last 15 years, but the only thing that has changed during that period is that the number of bears has exploded"

*Rune Stokke, Chief of Udtja Sami village*



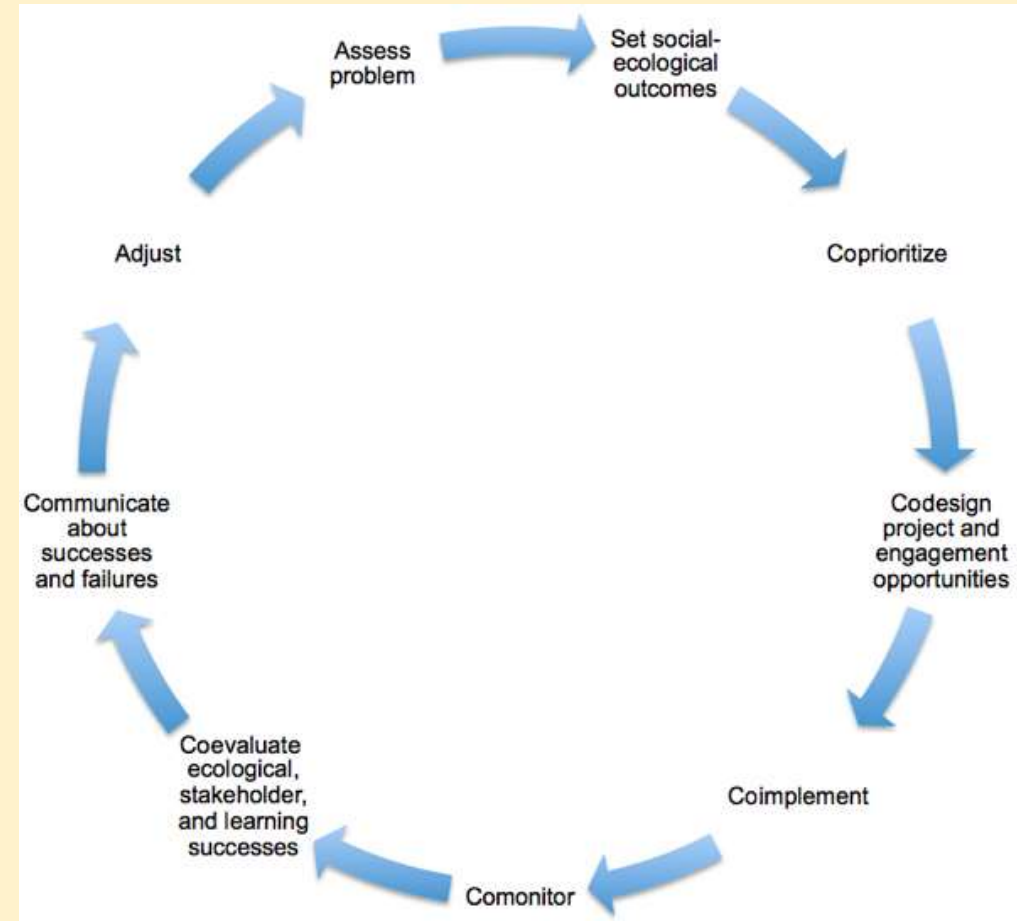
Recent field data:

	<b>Area 1</b>	<b>Area 2</b>
Number of adult females reindeer	1160	1660
Number of calves lost	408	675
Estimated number taken by bears	343 ( $\pm$ 119)	283 ( $\pm$ 94)



# We need to engage more effectively with managers and policy makers.

## *Adaptive co-management*

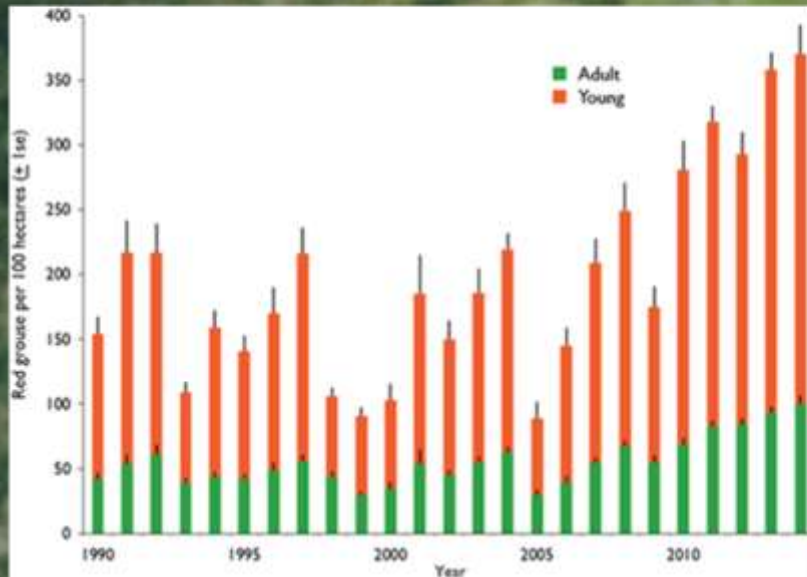


Two examples from the field

# Red grouse shooting

## Objective of driven grouse shooting.

Maximising numbers available for shooting



GWCT annual review 2015



# The Hen Harrier

- 662 pairs in UK (2010)
- Species red-listed & Annex 1 of EU Birds Directive (79/409/EEC)
- Main threat from illegal killing on grouse moors

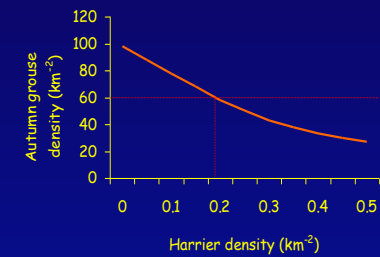
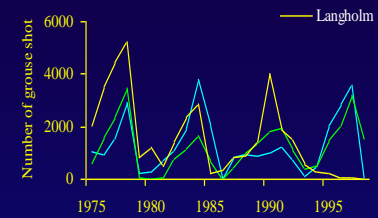
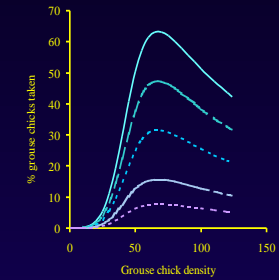
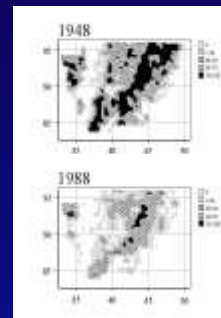
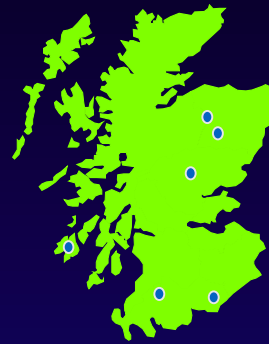
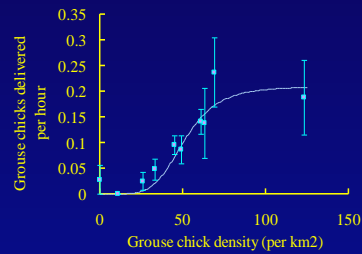
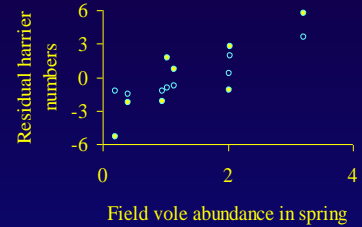
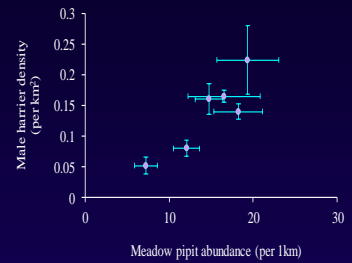


# Pros and cons of grouse shooting





# Research (1974-2016)



# Inferences from ecology

Harriers breeding at high density can make driven shooting unviable  
– “predator pit”

Harriers breeding at low density can coexist with driven shooting

Illegal killing limits harrier population on grouse moors



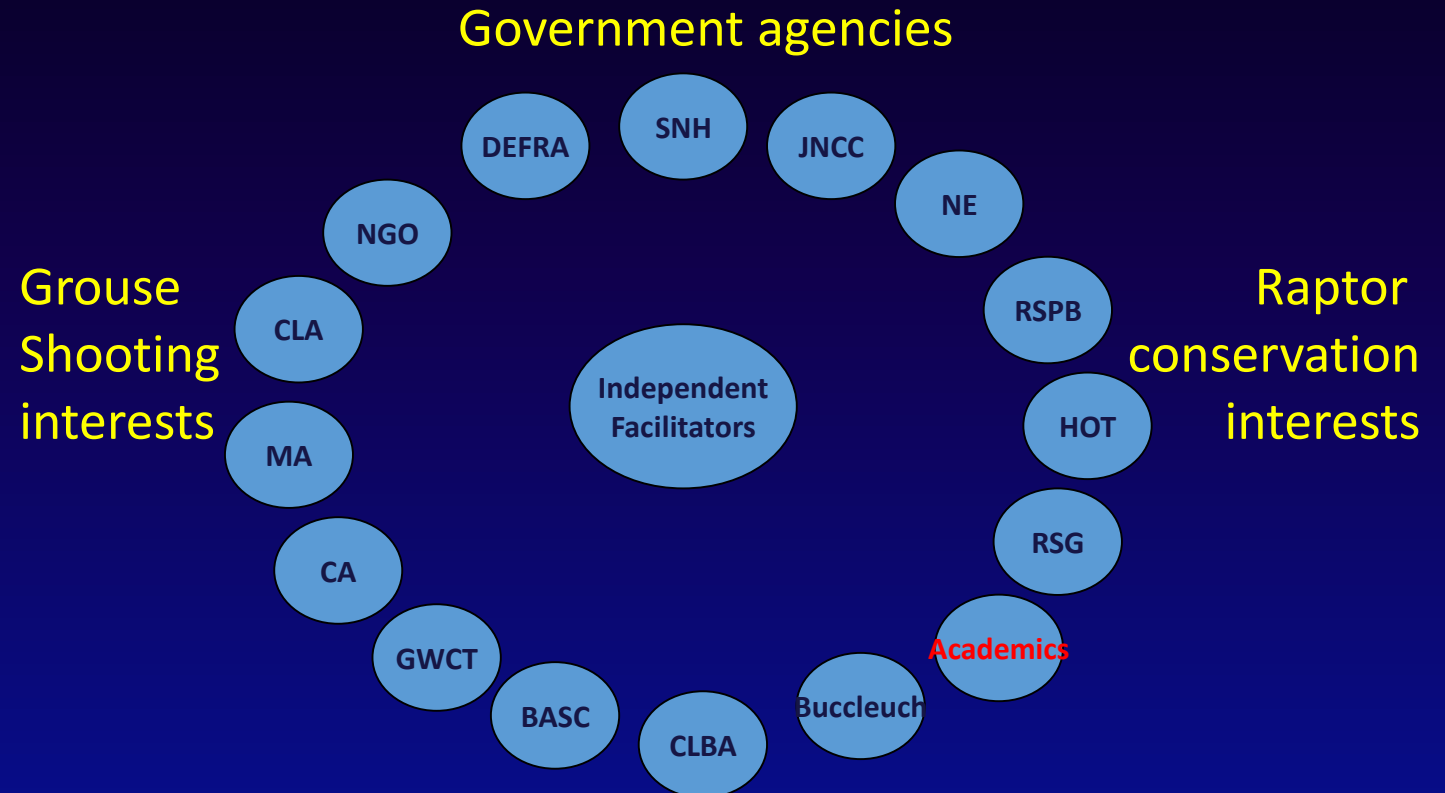
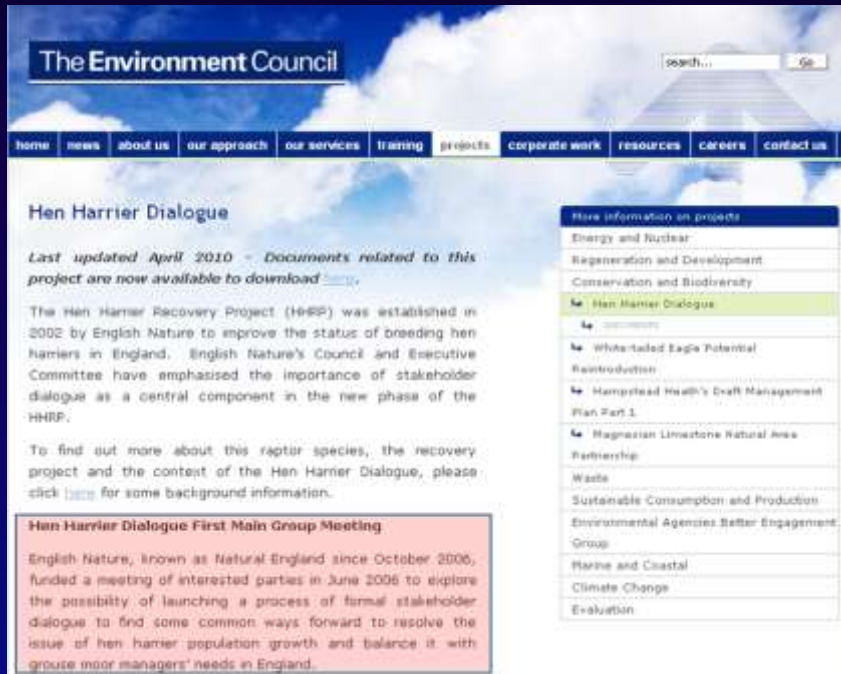
Thirgood et al (2000)  
Etheridge et al (1997)

# Suggested solutions

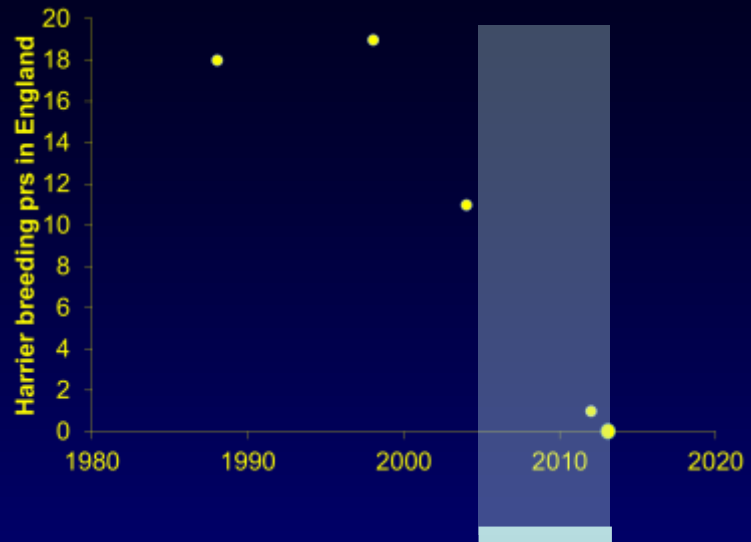
- Ban driven grouse shooting
- License grouse shooting
- Increase enforcement
- Improve technology – tags & drones etc
- Move to low intensity management
- Financial compensation
- Intra-guild predation
- Increase grouse numbers – trap & transfer or rear & release
- Alter habitat to reduce harrier numbers or predation rates
- Chemical aversion therapy to stop harriers eating grouse
- Feed harriers to stop them eating grouse
- Deter harriers from settling using eagles, gas-guns
- Quota or ceiling scheme – move surplus
- Zoning
- Re-introduce elsewhere
- Kill the harriers



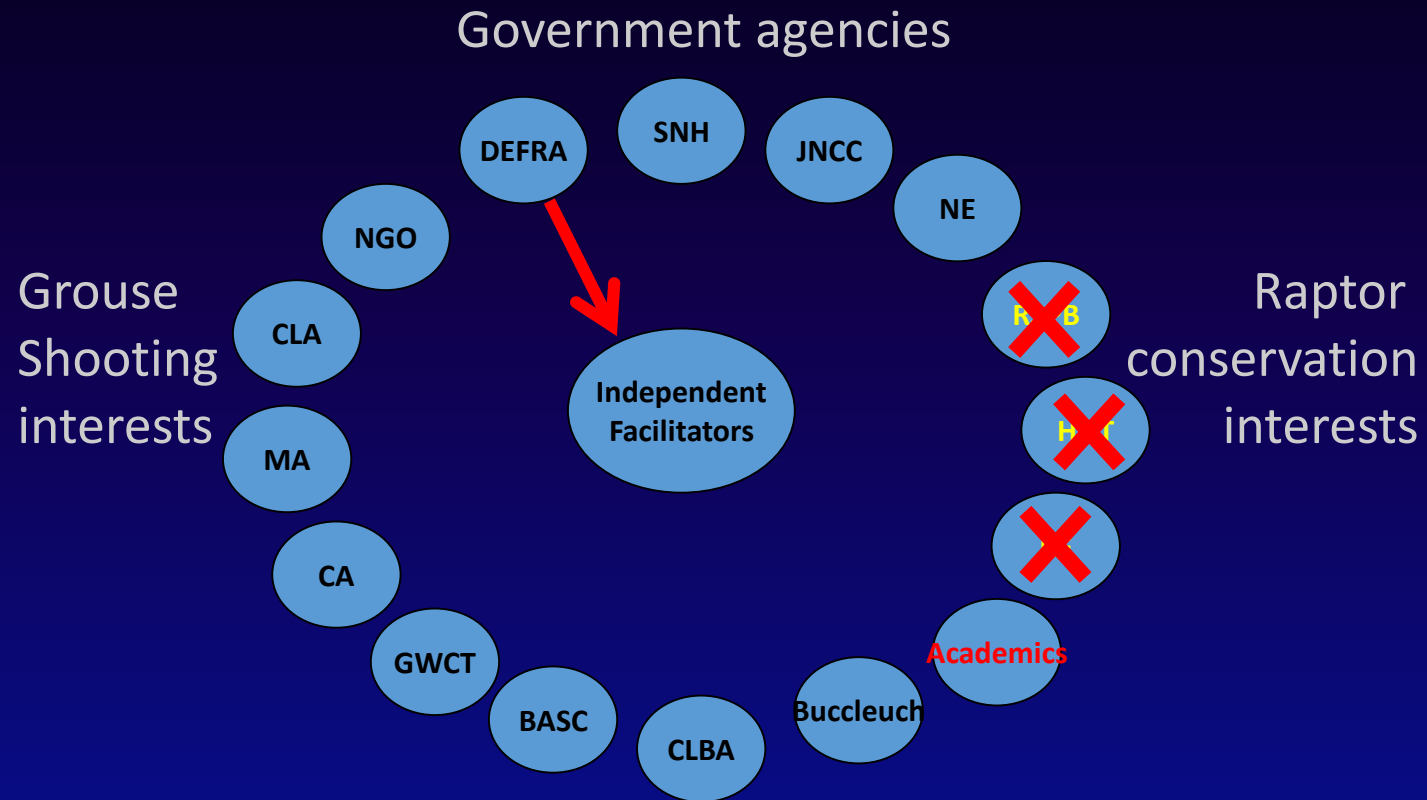
# Hen Harrier Dialogue 2006-2013



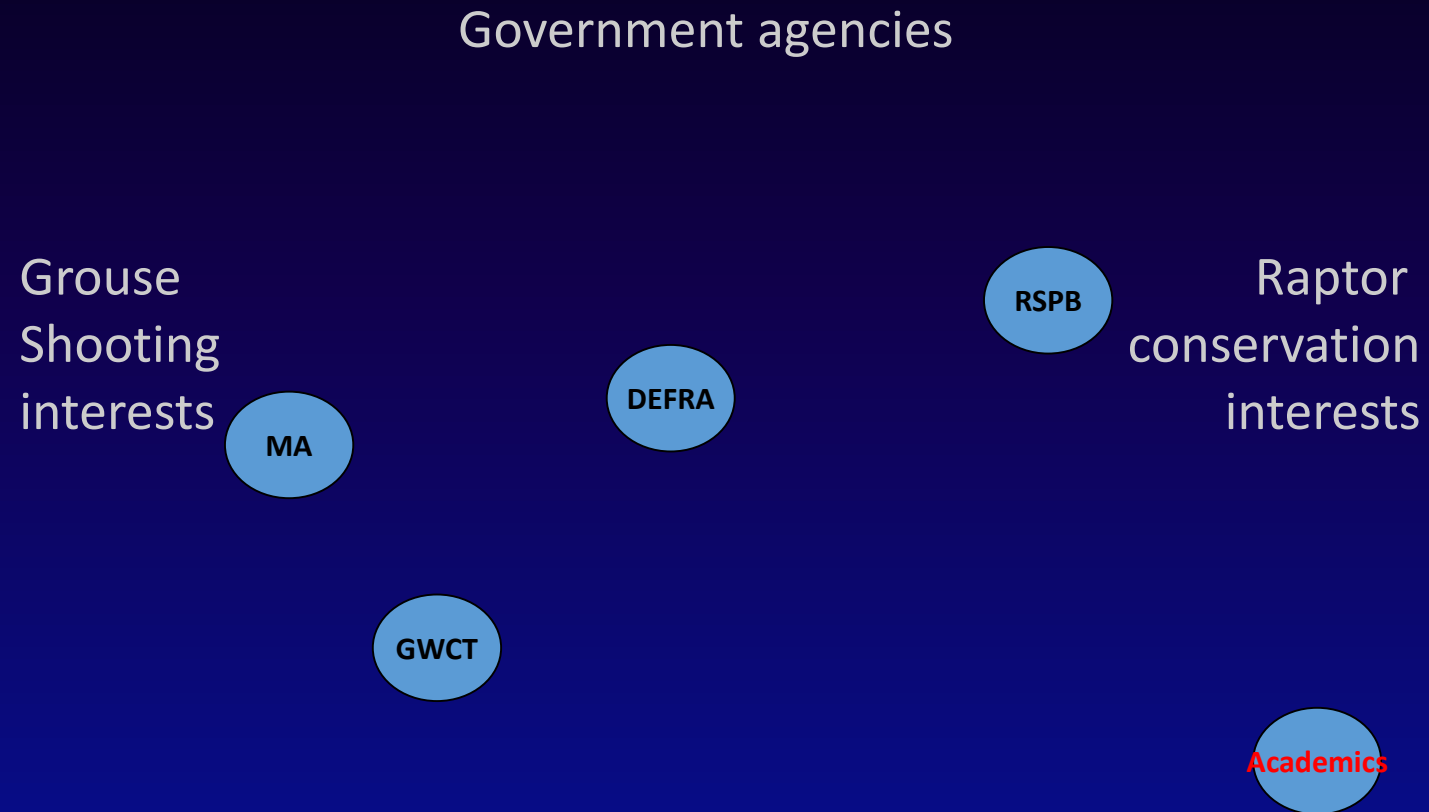
# Dialogue & decline



# Hen Harrier Dialogue 2006 - 2013



# Hen Harrier Dialogue 2013 - 2015





# DEFRA's

## Hen Harrier Joint Recovery Plan (2016)

1. Law enforcement, prevention and intelligence – led by a senior police officer
2. Ongoing monitoring of breeding sites and winter roost sites
3. Further research of the movement of hen harriers using satellite tracking
4. Diversionary feeding of hen harriers to reduce predation on grouse chicks
5. Engagement study about reintroducing them across suitable habitat in England (e.g. translocation of French lowland harriers to our lowlands)
6. Trial the temporary movement of hen harrier young to aviaries (also called 'brood management')

# Current situation

- Grouse managers fear increasing harriers and get away with illegal killing
- Main conservation group has abandoned dialogue & demand stronger enforcement
- Police have more pressing priorities
- Policy makers procrastinate
- Arguments becoming increasingly polarised
- Shifting power dynamics due to social media
- Activists playing greater role
- Government pushing ahead with management plan



# Conservation v Fishing



# Seal conservation v salmon fishing



- Salmon form small part of the diet of the seals
- Impact of seal predation “probably small”
- Perceived impact “significant” or “moderate” amongst fishermen
- This perception has led to fishermen shooting seals





# Adaptive co-management plan

- Bring stakeholders, researchers and policy makers together to:
  - Restore conservation status of seals & salmon
  - Reduce shooting of harbour seals
  - Reduce seal predation on salmon
- Plan has led to:
  - agreement over evidence base
  - reduced shooting
  - research to reduce salmon losses
  - reduced conflict

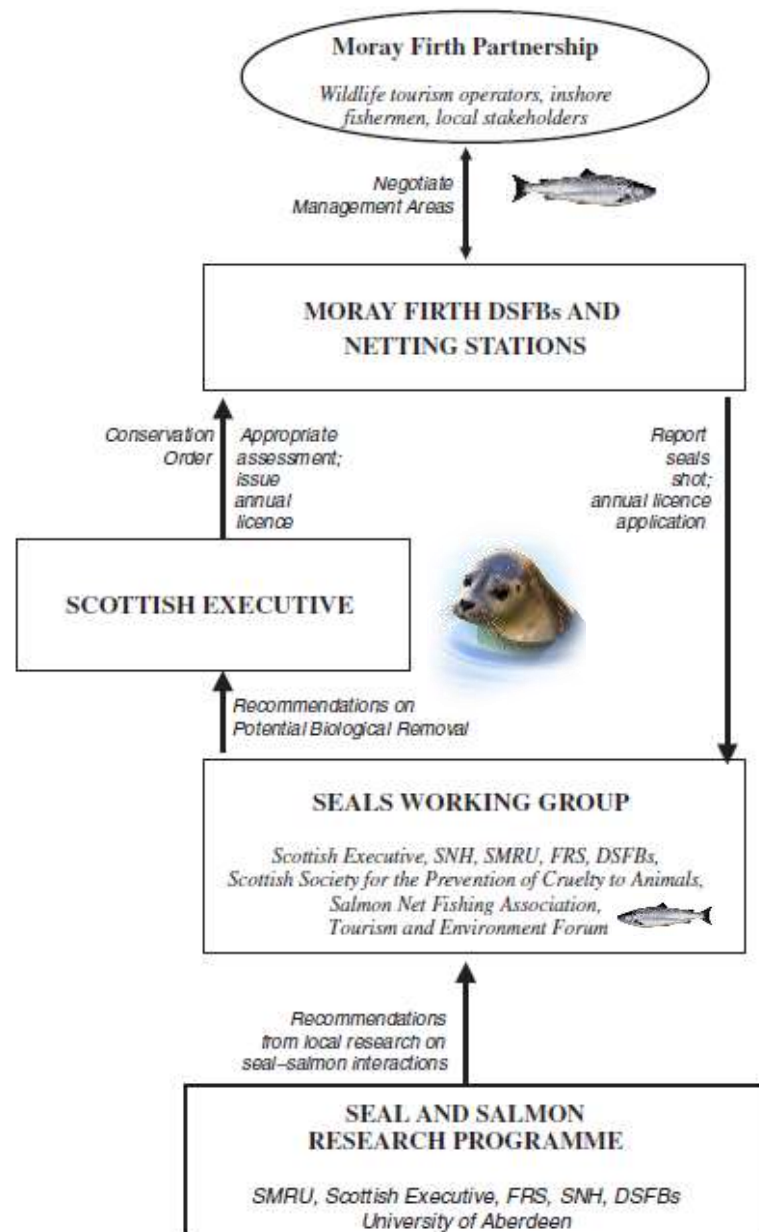


Figure 6. The adaptive co-management framework established for the Moray Firth Seal Management Plan, and stakeholder organisations involved.

# Adaptive co-management plan

- Successful

BUT

- Small scale
- No long-term funding
- Conflicts now increasing again

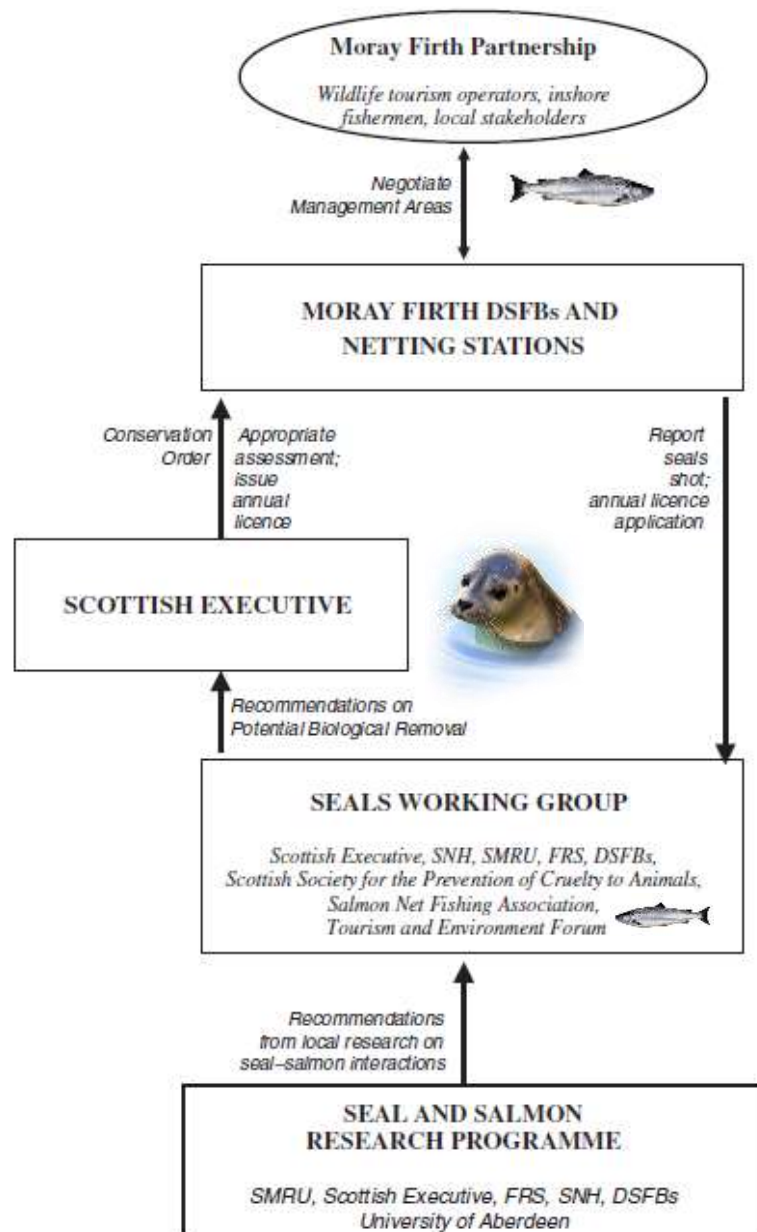


Figure 6. The adaptive co-management framework established for the Moray Firth Seal Management Plan, and stakeholder organisations involved.

Some general lessons

**Ecology is not enough.**

We need inter-disciplinary teams to  
understand & manage conflicts



**Management not resolution.**

Conflicts will persist.

**Researchers need to engage more effectively  
with managers and policy makers.**

*Adaptive co-management*

# Engagement is crucial

If we want to manage conflict, then we have to engage to develop shared understanding and explore trade-offs.



**Conflict management needs resources and political will.**