



Creating a Network of Knowledge for
biodiversity and ecosystem services

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Matching questions with knowledge synthesis methodologies: an overview

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Collaboration for
Environmental
Evidence

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The challenges

- Range of different needs/requests to the NoK
- Many types of questions may be submitted
- Different forms of knowledge might be relevant
- Different methods for synthesising knowledge will be required

Top 100 ecological questions of high policy relevance in the UK

(Sutherland et al. 2006)

Question type	Percentage of top 100	Percentage of total 1003
Seeking greater understanding or predictive power (including horizon scanning)	44	48
Seeking measures of anthropogenic impact	34	26
Seeking measures of effectiveness of interventions	13	11
Seeking appropriate methodologies	6	13
Seeking optimal management	3	2

Matching question type with methods of knowledge/evidence synthesis

Question type	Example methods
Seeking greater understanding or predictive power (including horizon scanning)	Expert Consultation, Modelling, Scenario
Seeking measures of anthropogenic impact	Systematic Mapping, Systematic Review, Impact Assessment
Seeking measures of effectiveness of interventions	Systematic Mapping, Systematic Review, (+Cost effectiveness)
Seeking appropriate methodologies	??????????
Seeking optimal management	Adaptive Management

Example question types

Impact (cause and effect) - **Effectiveness** - **Horizon scanning** - **Policy level** (needs unpacking)

How do changes in the diversity and abundance of pollinators in Europe relate to different factors like use of pesticides, landscape attributes, parasites and other factors? (- *From White Paper*)

What is the relationship between animal health and aspects of global change (including changes in biodiversity) in Europe? (- *From White Paper*) - **What is the link between avian flu and bird migration?** (- *From Regional Workshop*)

What are the potential consequences of climate change in Europe on the current legislation in nature conservation (Birds and Habitats Directive)? (- *From White Paper*)

Ecosystem restoration: How to balance the goals of service provision and nature conservation in restoration efforts across European ecosystems? (- *From White Paper*)

How can ecological (green) infrastructure contribute to sustain biodiversity in EU? (- *From Regional Workshop*)

What is known about marine acidification in the Mediterranean, where are the more critical zones, what should we do? (- *From Regional Workshop*)

How important is the connectivity of marine protected areas? (- *From Regional Workshop*)

What do we know about the efficiency of agri-environmental measures? (- *From Regional Workshop*)

What is the relevance of microbes on the biodiversity management? Is this relevance enough recognized by the authorities? (*From Regional Workshop*)

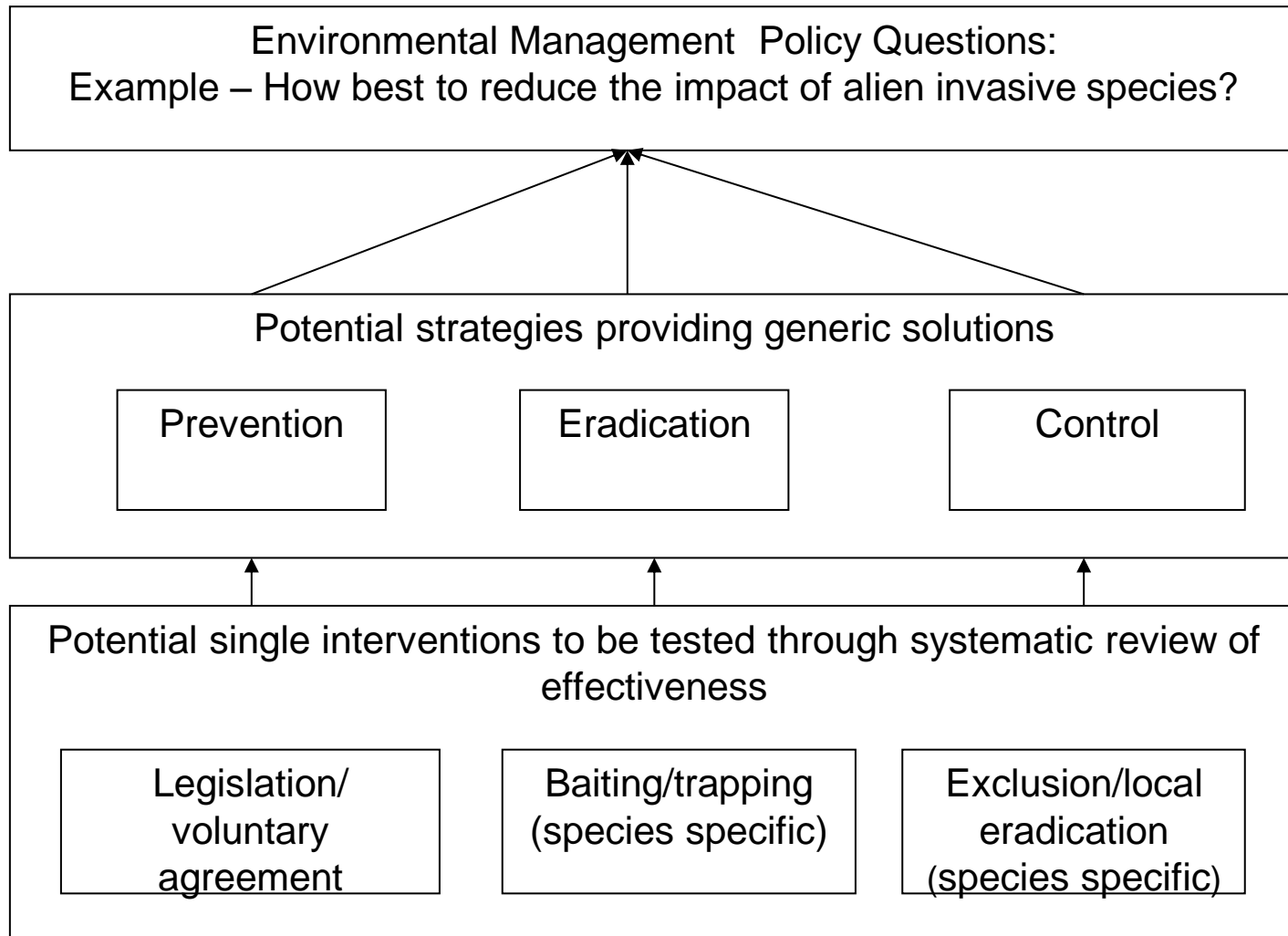
What are likely to be the most important changes to conservation from synthetic biology? (*From William Sutherland on ResearchGate*)

What are some concrete examples of how declines in wildlife have led to social unrest/inequity/conflict? (*From Ryan Marsh, Berkeley, on ResearchGate*)

Should deep-sea trawling be banned? (*This month, the European Union (EU) is scheduled to vote on a proposed ban on deep-sea bottom trawling*)

Unpacking broad policy questions – invasive species

Pullin et al. (2009) Journal of Applied Ecology



Considerations for choice of synthesis methodology

- Time constraints – policy window etc
- Resource constraints
- Controversy/conflicts of evidence
- Controversy/conflicts of values
- Breadth/scale of question
- Amount of evidence
- Impact of getting wrong answer

Guide to choice of methodology

	Systematic Map	Systematic review
Timescale days/weeks	X	X
Timescale months/years	√	√
Low Resources	?	X
High controversy/conflict of evidence	?	√
Broad question with multiple PICO/PECO combinations	√	X
Specific question with measurable outcome	X	√
High susceptibility to bias (e.g. selection bias, publication bias)	√	√
Little available evidence	?	X
Horizon scanning	?	X
Serious risk if findings are wrong	√	√

Concluding remarks

- Question preparation and consultation, together with choice of synthesis methodology, are key stages/activities for the NoK.
- Basic guidance on how to match questions to methods would be a good first step.

A close-up photograph of a plant with several green, spiky flower heads. The leaves are long and narrow, radiating from a central point. The text "THANK YOU FOR YOUR ATTENTION..." is written diagonally across the center of the image.

THANK YOU FOR YOUR ATTENTION...



Ask your question via Twitter #BDKconf2

or directly through the live chat window

www.biodiversityknowledge.eu

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***Towards a future Network of Knowledge on biodiversity
and ecosystem services in Europe***

**September, 24-26 2013
Jerusalemkirche, Berlin**



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