

Evidence in Conservation Teaching Initiative

Introduction

la protection de la nature fondé sur des preuves

Contenu adapté a un public de scientifiques

Traduit en français par Dr. Daphne Kerhoas

An Introduction to evidence-based conservation (content tailored for research scientists)

By Harriet Downey, Tatsuya Amano and Jessica Walsh

2020

Translated to French by Daphne Kerhoas

<https://www.britishecologicalsociety.org/applied-ecology-resources/about-aer/additional-resources/evidence-in-conservation-teaching/>

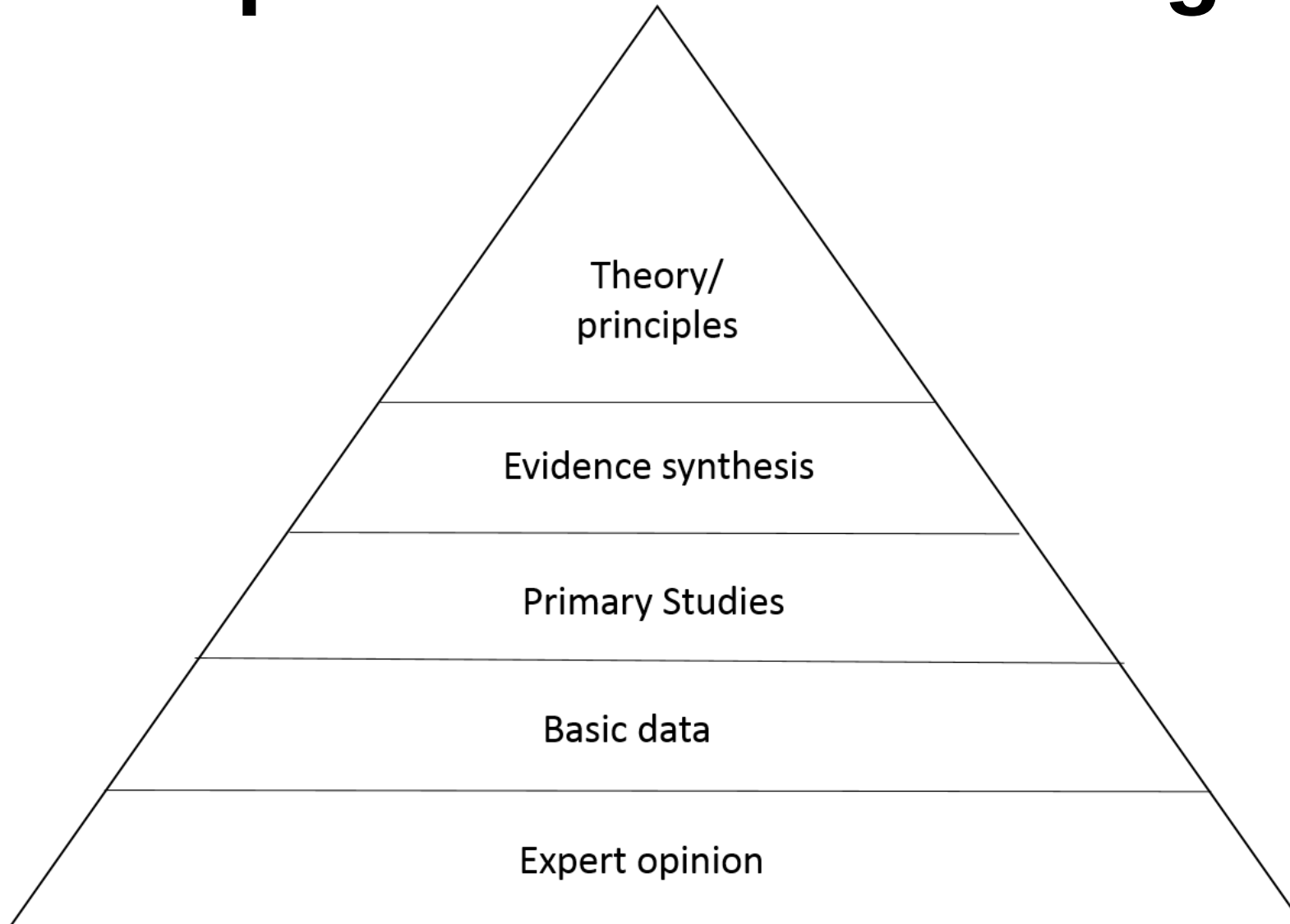
Plan

- Qu'est-ce qu'une preuve scientifiques et pourquoi est-elle importante?
- Comment les preuves scientifiques sont-elles utilisées dans la conservation de la nature?
- Quels sont les obstacles à l'utilisation des preuves scientifiques dans la conservation de la nature?
- Comment ces obstacles sont-ils surmontés?
- Synthèse des preuves
 - Revues systématiques
 - Cartes systématiques
 - Synthèses / résumés
 - Outils d'aide à la décision
- Défis de la synthèse des preuves

Qu'est-ce qu'une preuve scientifiques?

- *Informations* pertinentes utilisées pour évaluer une ou plusieurs hypothèses liées à une question.
- Les *preuves scientifiques* réfèrent spécifiquement aux informations qui ont été collectées à l'aide d'une méthode scientifique. Cela comprend les études publiées et revues par des pairs et les études non publiées dans des thèses ou des rapports.

Toutes les preuves sont-elles égales?

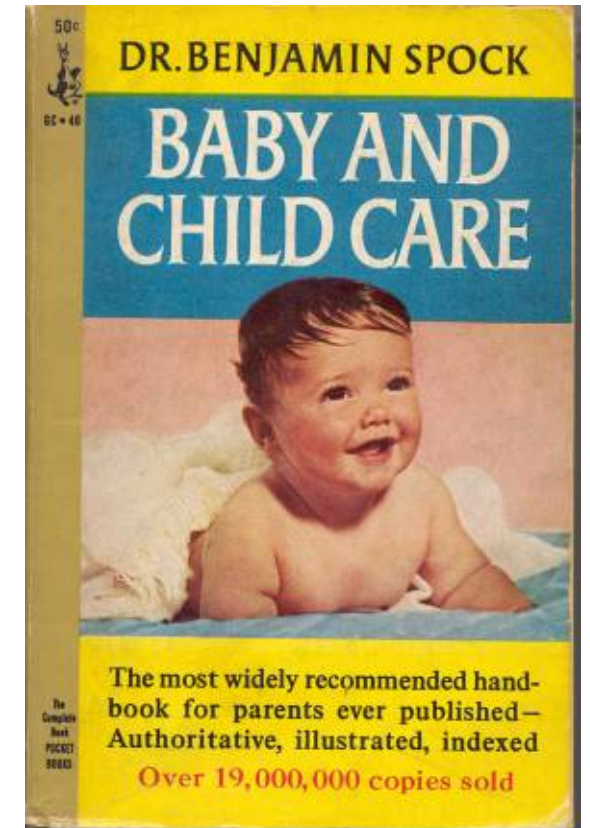


Pourquoi l'utilisation de preuves scientifiques est-elle importante?



Dakota Corbin

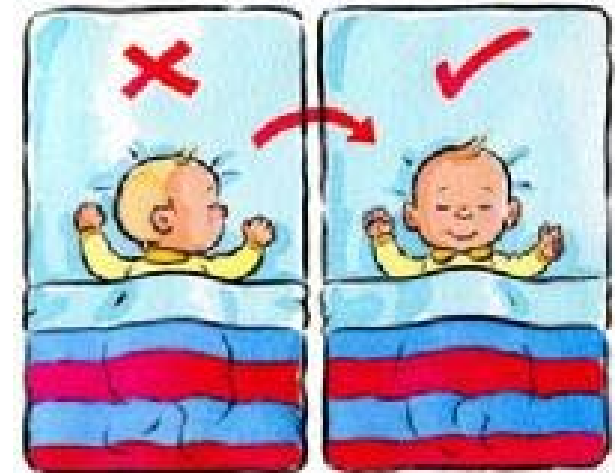
- Le syndrome de mort subite du nourrisson (MSN ou SIDS en anglais) est devenu une épidémie dans les années 60 et 70
- À son apogée, les bébés des pays riches mouraient à raison de 1 naissance sur 250



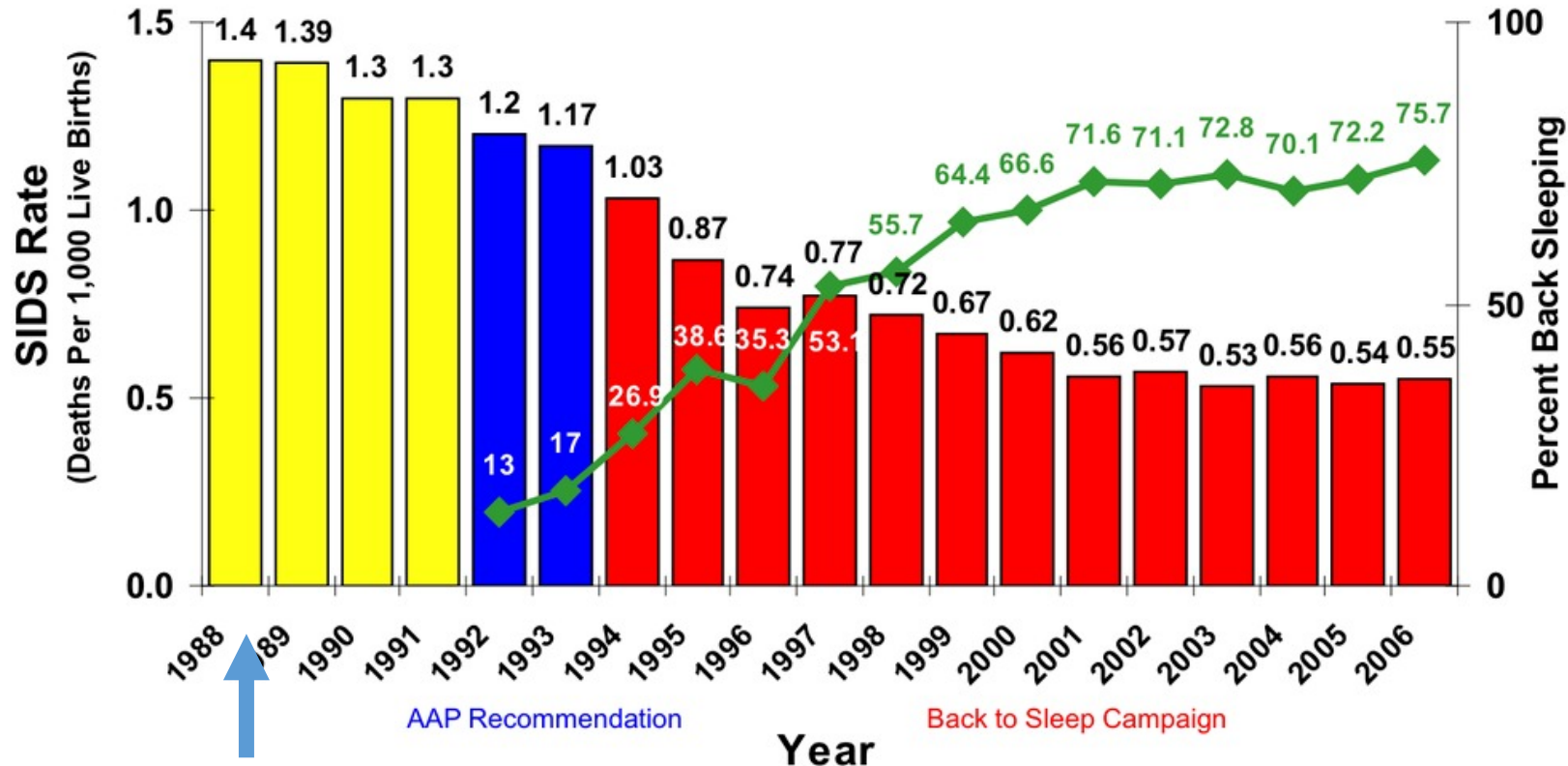
- Au début des années 1980, le Dr Peter Flemming a commencé à interviewer des parents endeuillés et s'est rendu compte qu'ils avaient tous quelque chose en commun: leur bébé dormait sur le ventre.
- Des recherches détaillées ont été menées prouvant le lien
- MAIS ca a été une lutte pour amener le système de santé publique à changer ses recommandations



**Safe Sleep for
Your Baby**



SIDS Rate and Back Sleeping (1988 – 2006)



Evidence published

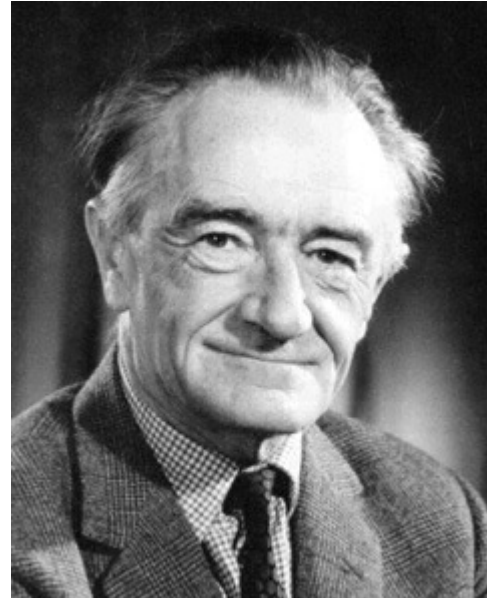
SIDS Rate Source: CDC, National Center for Health Statistics,
Sleep Position Data: NICHD, National Infant Sleep Position Study.

- À la suite de nouvelles recommandations, le nombre de décès dus à la Mort Subite du Nourrisson (SIDS) est passé de 1 sur 250 à 1 sur 3000

Prise de décision fondée sur des preuves

- facilite la collation et la synthèse systématiques des preuves
- augmente la qualité des preuves disponibles pour les décisions
- réduis les biais et le picorage (i.e. 'cherry picking')
- accroît la transparence des décisions
- accroît l'efficacité de la gestion
- identifier les lacunes dans les connaissances

(Sutherland *et al.* 2004)



THE ROCK CARLING FELLOWSHIP
1971
**EFFECTIVENESS
AND EFFICIENCY**
RANDOM REFLECTIONS ON
HEALTH SERVICES

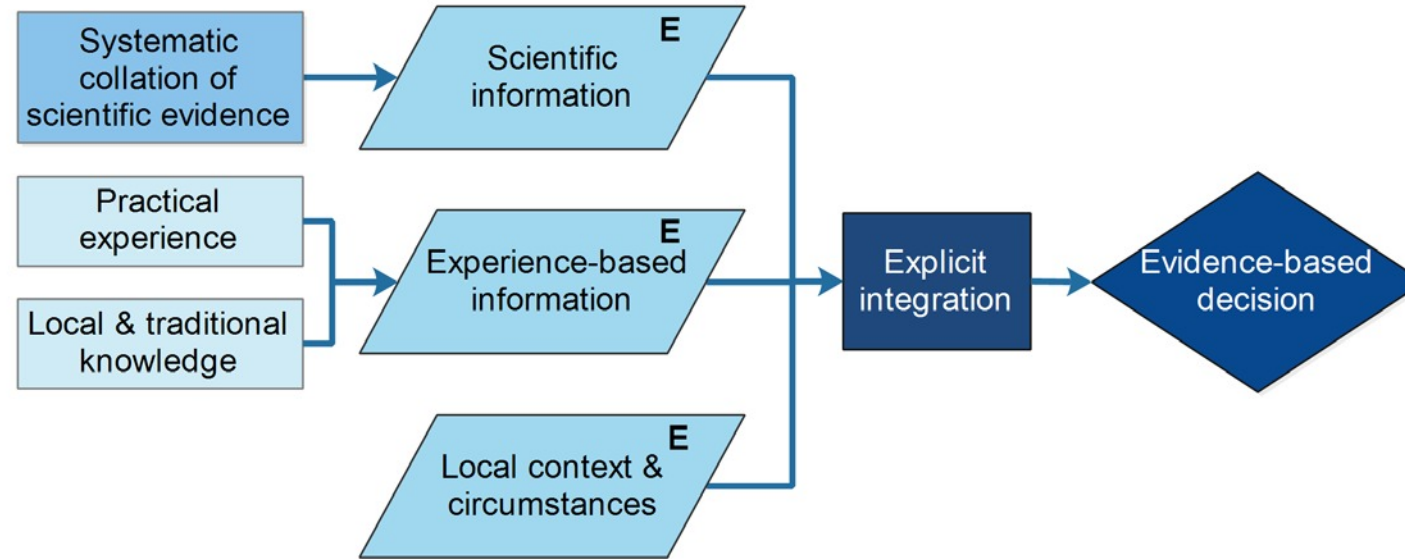
A. L. Cochrane
CBE, FRCP
Director
MRC Epidemiology Unit
Cardiff

THE NUFFIELD
PROVINCIAL HOSPITALS TRUST
1972

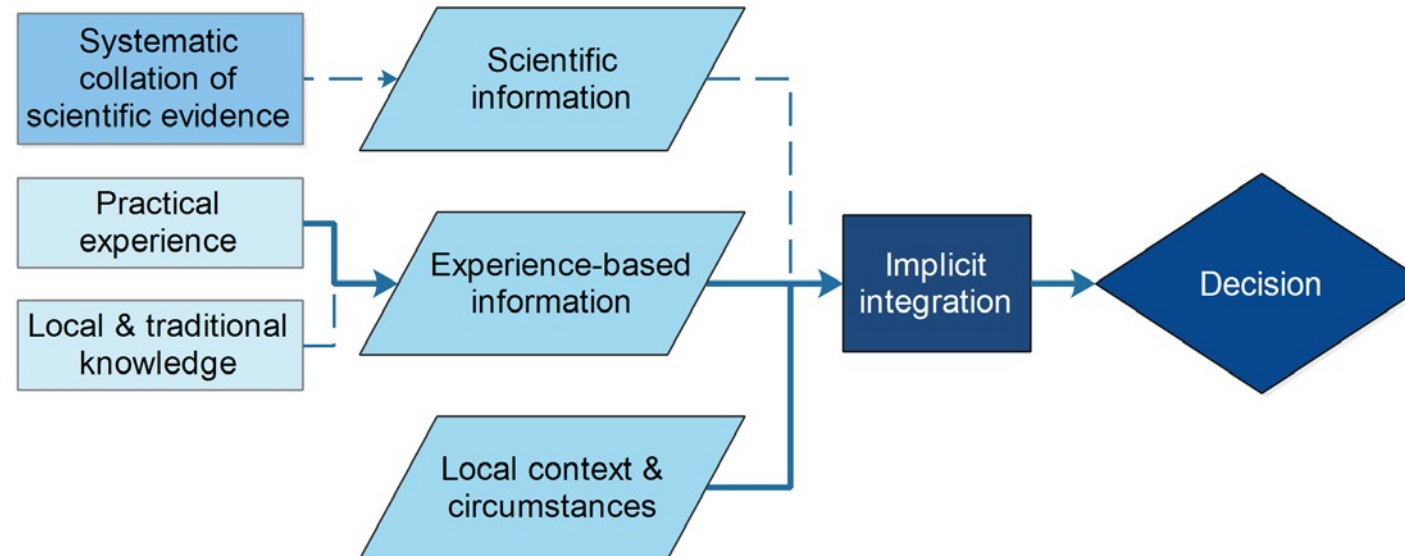
Mais que devons-nous considérer d'autre dans la prise de décision?

- Le savoir local
- Les connaissances autochtones et traditionnelles
- Les connaissances basées sur l'expérience et les avis d'experts
- Les valeurs et cultures sociales
- Les coûts économiques
- Les ressources
- La faisabilité

a) Revised model for evidence-based conservation

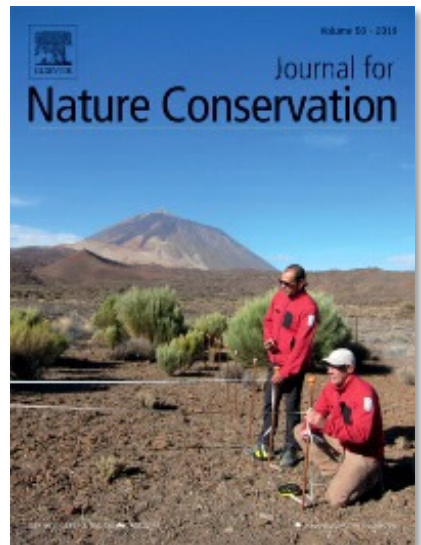
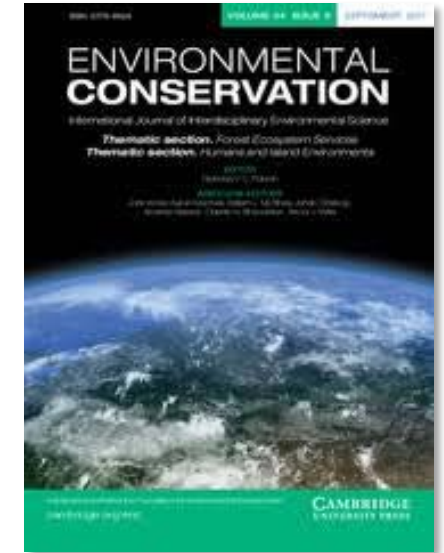
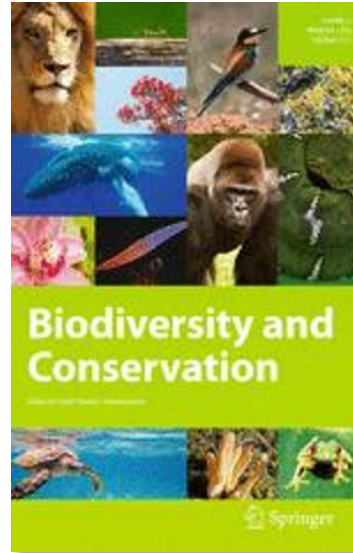
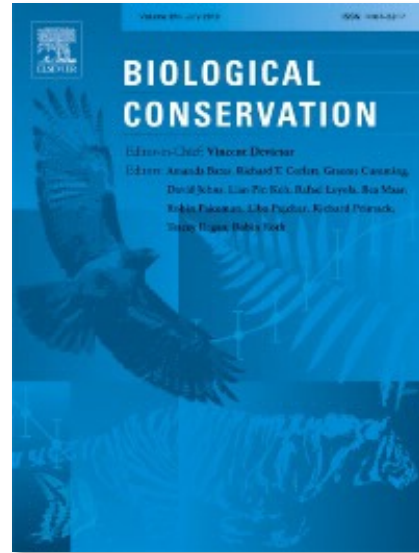


b) Model of current conservation practice



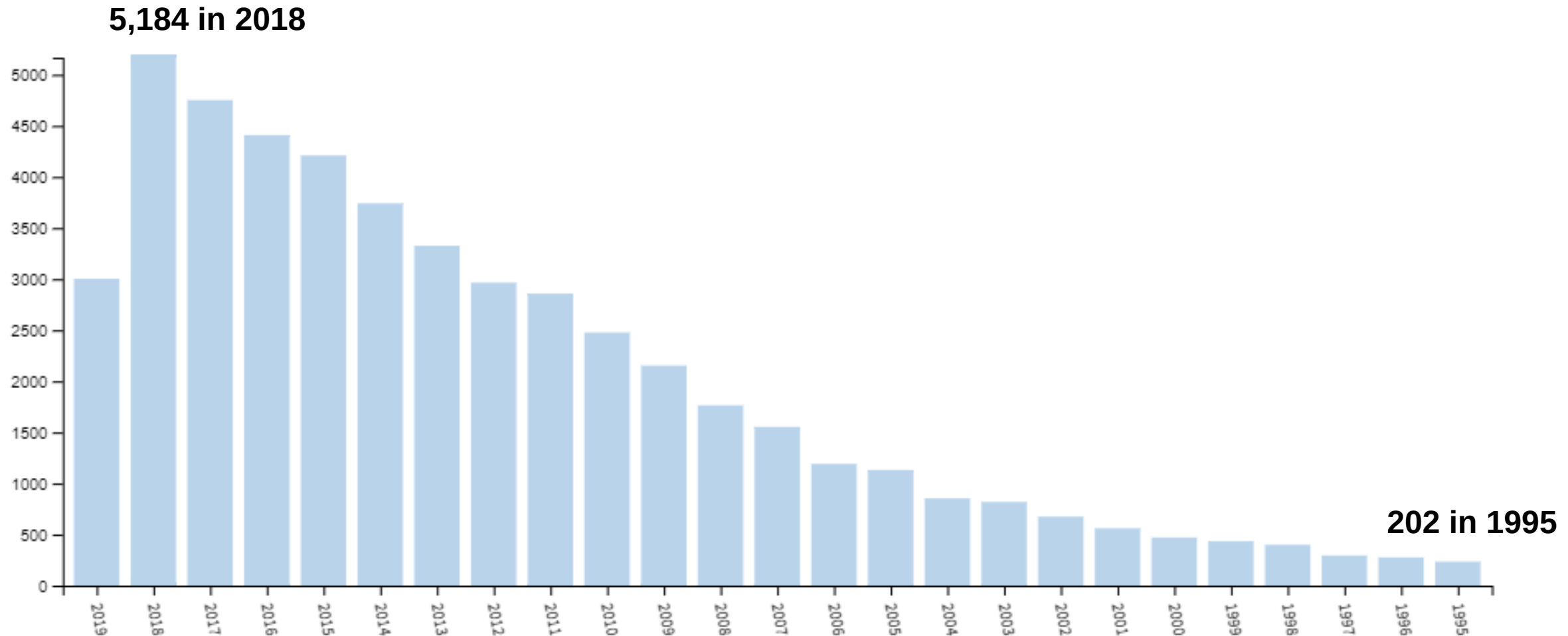
Preuve scientifique pour la conservation de la nature

Accumulation de preuves scientifiques sur la conservation



Accumulation de preuves scientifiques sur la conservation

Nombre d'études recherchées sur le Web of Science avec les mots clés «biodiversity» et «conservation»

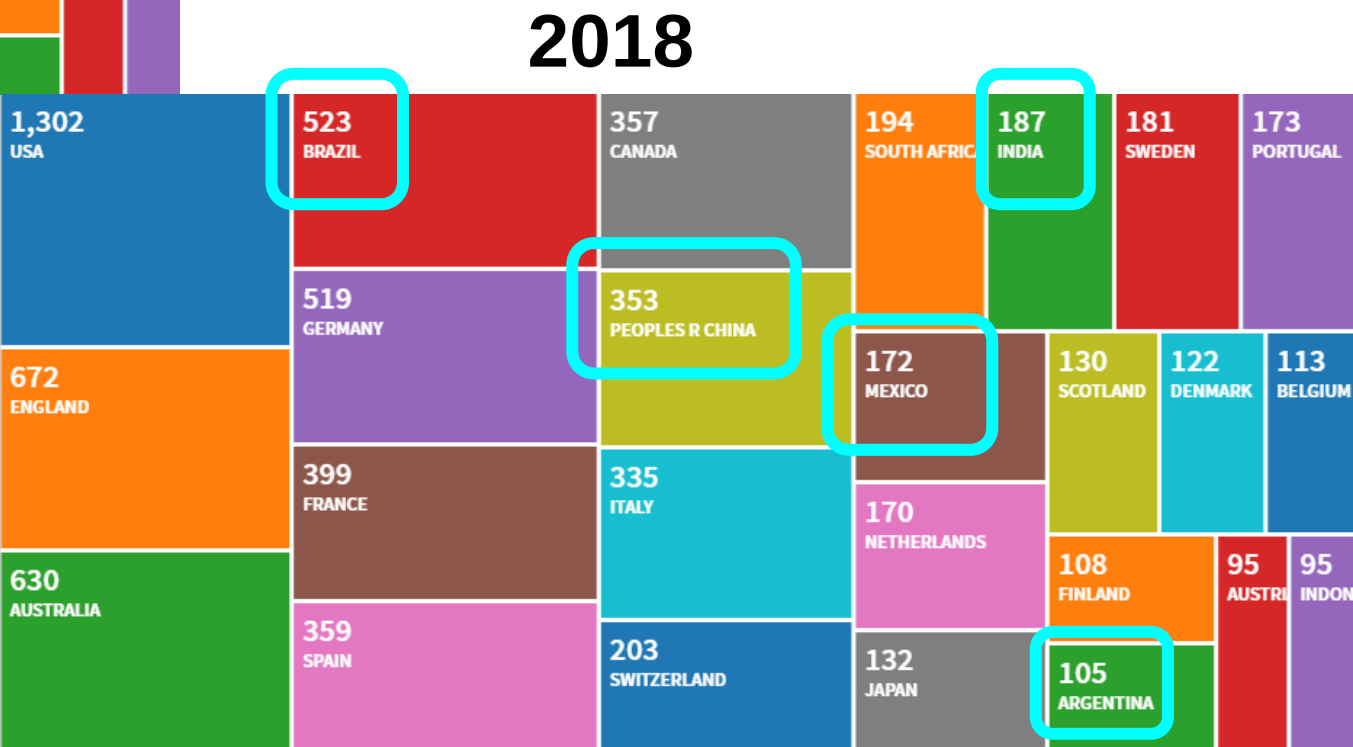


Accumulation de preuves scientifiques sur la conservation

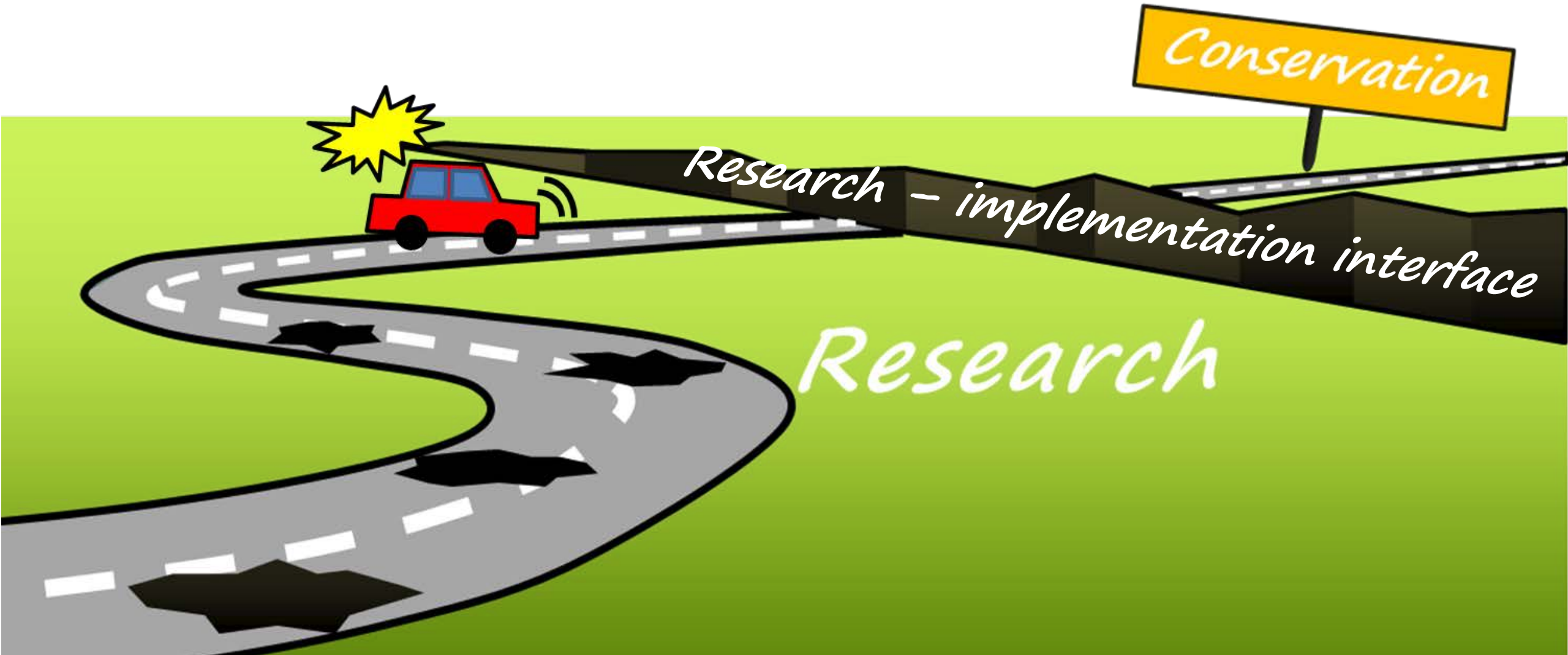


1995

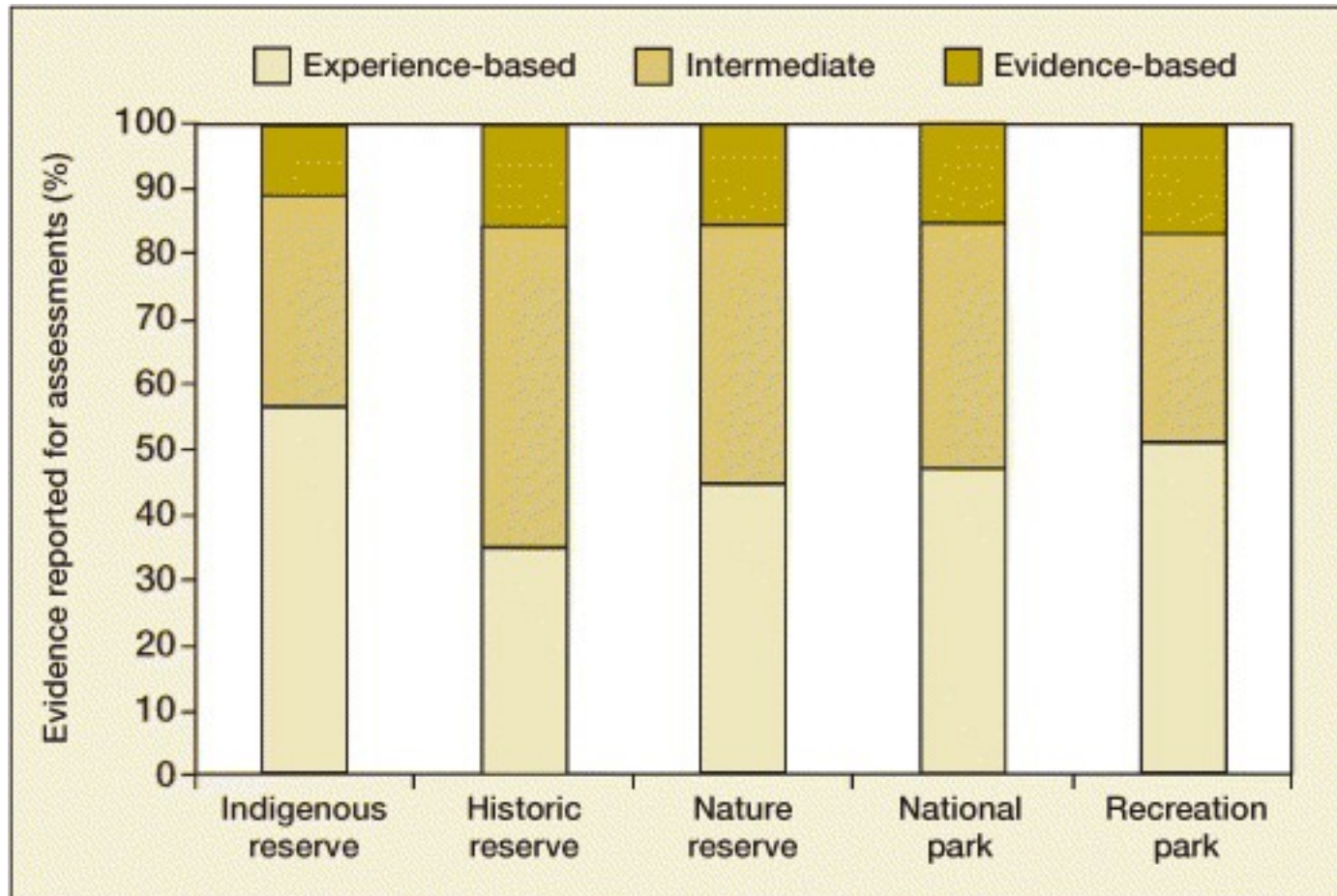
Nombre d'études recherchées sur Web of Science avec «biodiversité» et «conservation»



Les connaissances accumulées sont-elles réellement utilisées pour la conservation?



Manque de preuves scientifiques utilisées dans les décisions



Sources d'information des praticiens de la conservation de la biodiversité

L'interface Recherche-Application

Seuls **33%** des 88 articles scientifiques sur les évaluations de la conservation entre 1998 et 2002 ont conduit à la mise en œuvre de certaines actions (Knight et al 2008 Cons Biol)

Seuls **23%** des décideurs ont utilisé des articles scientifiques lors de la compilation des plans de gestion des réserves naturelles au Royaume-Uni (Pullin et al 2004 Biol Conserv)

Seulement **10%** des décisions de gestion de la conservation en Australie utilisent des preuves scientifiques (Cook et al 2010 Front Ecol Environ)

Environ **66%** des gestionnaires de ressources californiens utilisent des revues à comité de lecture pour obtenir des informations sur les invasions de plantes (Matzek et al 2014 Cons Lett)

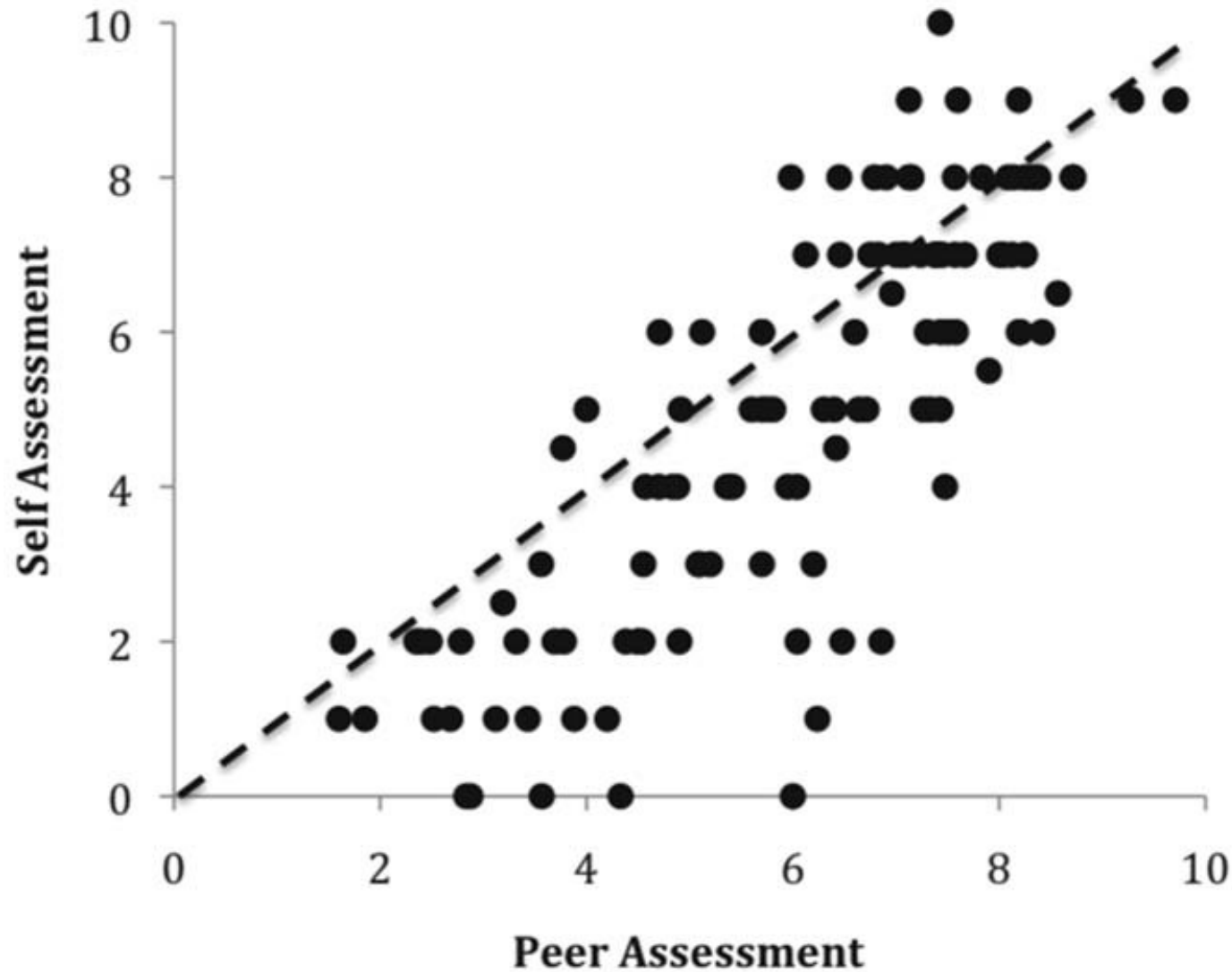
La littérature scientifique ne représente que **2,4%** des sources d'information utilisées par les praticiens de la conservation à Broadland, Royaume-Uni (Sutherland et al 2004 TREE)

Seuls **20 +%** des professionnels de la conservation en Suisse utilisent des revues scientifiques internationales pour prendre leurs décisions (Fabian et al 2019 Biol Conserv)

Pourquoi l'utilisation des preuves scientifiques est-elle importante?

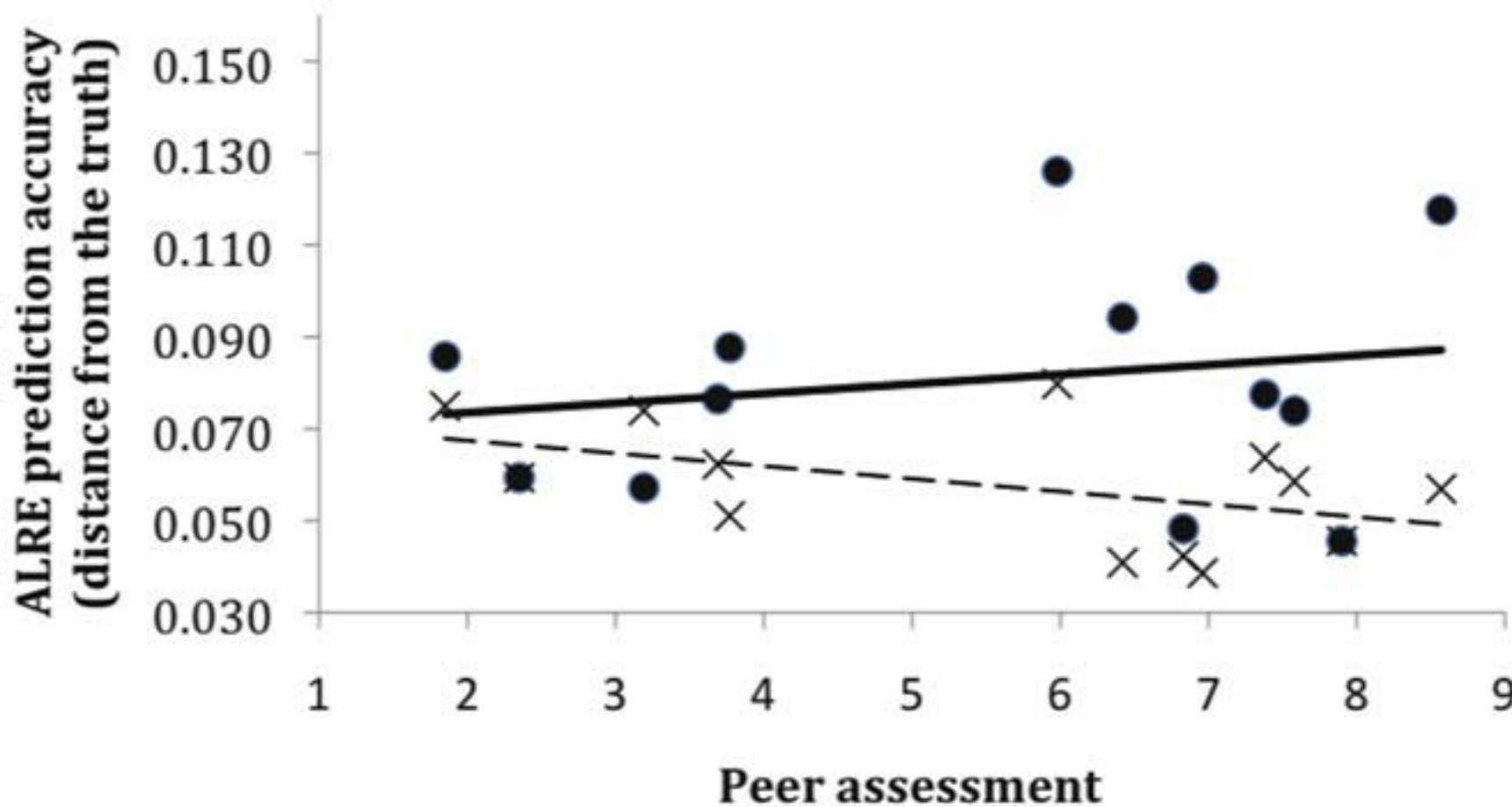
- Augmente la qualité des preuves disponibles pour les décisions
- Réduis les biais et le picorage (i.e. 'cherry picking')
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- Accroît l'efficacité de la gestion
- Identifie les lacunes dans les connaissances

**Mais pourquoi ne pouvons-nous pas
simplement demander aux experts?**



Classement clair et cohérent de l'expertise par les experts et leurs pairs Burgman et al. (2011)

Self assessment versus peer assessment of expertise. Data from all workshops (overall correlation, $r = 0.85$). Peer assessment is the average of the scores on the 11-point scale provided by each person's peers on the day of the workshop. The strong relationship was consistent across the five groups, where the correlations ranged from 0.67 to 0.94. The dashed line is parity (where self assessment and peer assessment are equal).



MAIS pas de
corrélation entre le
classement et les
performances!

Figure 2. Peer assessment of expert knowledge versus actual performance. Prediction accuracy is calculated as ALRE (see Burgman et al 2011). Small values for prediction accuracy are better. Closed circles and the solid line are estimates from round 1 ($r = 0.19$). Crosses and the dashed line are estimates from round 2 ($r = 20.47$). Estimates closer to the x-axis indicate the answers are closer to the truth.

Pourquoi utiliser des preuves scientifiques est important



Sutherland and Wordley (2017) Nat Ecol Evol

Les portiques pour chauves-souris, utilisés au Royaume-Uni depuis plus d'une décennie pour un coût total d'environ 2,5 millions de livres sterling pour réduire la mortalité des chauves-souris sur les routes, sont connus pour être inefficaces mais sont toujours utilisés

Des nichoirs pour oiseaux installés à une densité exceptionnelle dans le cadre de la politique agricole commune de l'UE

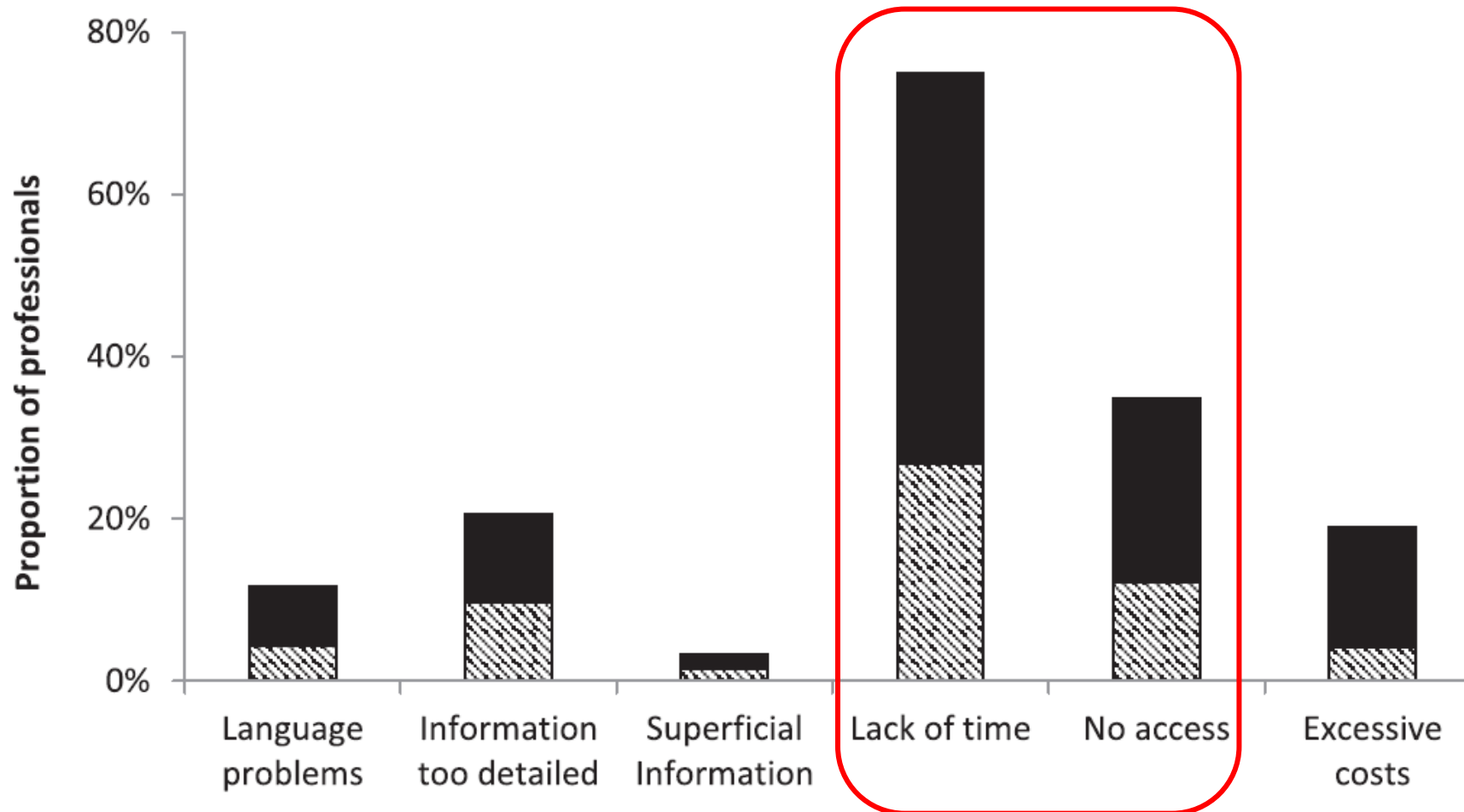


Pe'er et al (2014) Science

Si c'est important, pourquoi est-ce que ce n'est pas utilisé?

Pourquoi les preuves scientifiques ne sont pas utilisées dans la pratique

Raisons pour lesquelles les revues professionnelles ne sont pas lues par les professionnels suisses de la conservation



A word cloud on a black background listing various barriers to research use in decision-making. The words are in different colors (white, yellow, green, blue) and sizes. The most prominent words are 'poor organisational management and structure', 'no use of research in decision process', 'lack of capacity and resources', 'lack of access to research', and 'poor quality evidence'. Other visible words include 'nature of issue', 'science doesn't exist', 'lack of skills to use research', 'practitioner characteristics', 'lack of awareness', 'negative organisational culture', 'high demand to publish', 'difficult to implement', 'negative stakeholders' attitudes and beliefs', 'poor practitioner-stakeholder relationships', 'lack of support for advisors', 'culture of practitioners', 'research not relevant or applicable', 'lack of engagements with wider community', 'reluctant or inexperienced decision maker', 'social, political and economic context', 'poor manager-advisor relationships', 'lack of skills to communicate research', 'poor academic-practitioner relationships', 'context of scientific evidence', 'practitioners' attitudes about research', 'culture of researchers', and 'recorded studies'.

nature of issue
 science doesn't exist
 lack of skills to use research
 practitioner characteristics
 lack of access to research
 culture of researchers
 practitioners' attitudes about research
 poor academic-practitioner relationships
 context of scientific evidence
 negative organisational culture
 lack of capacity and resources
 lack of awareness
 high demand to publish
 poor organisational management and structure
 recorded studies
 no use of research in decision process
 difficult to implement
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 social, political and economic context
 lack of support for advisors
 poor manager-advisor relationships
 culture of practitioners
 poor quality evidence
 lack of skills to communicate research
 research not relevant or applicable
 lack of engagements with wider community
 reluctant or inexperienced decision maker

A word cloud on a black background listing various barriers to research use. The words are in different colors (white, green, blue) and sizes. Five phrases are highlighted with orange rectangular boxes:

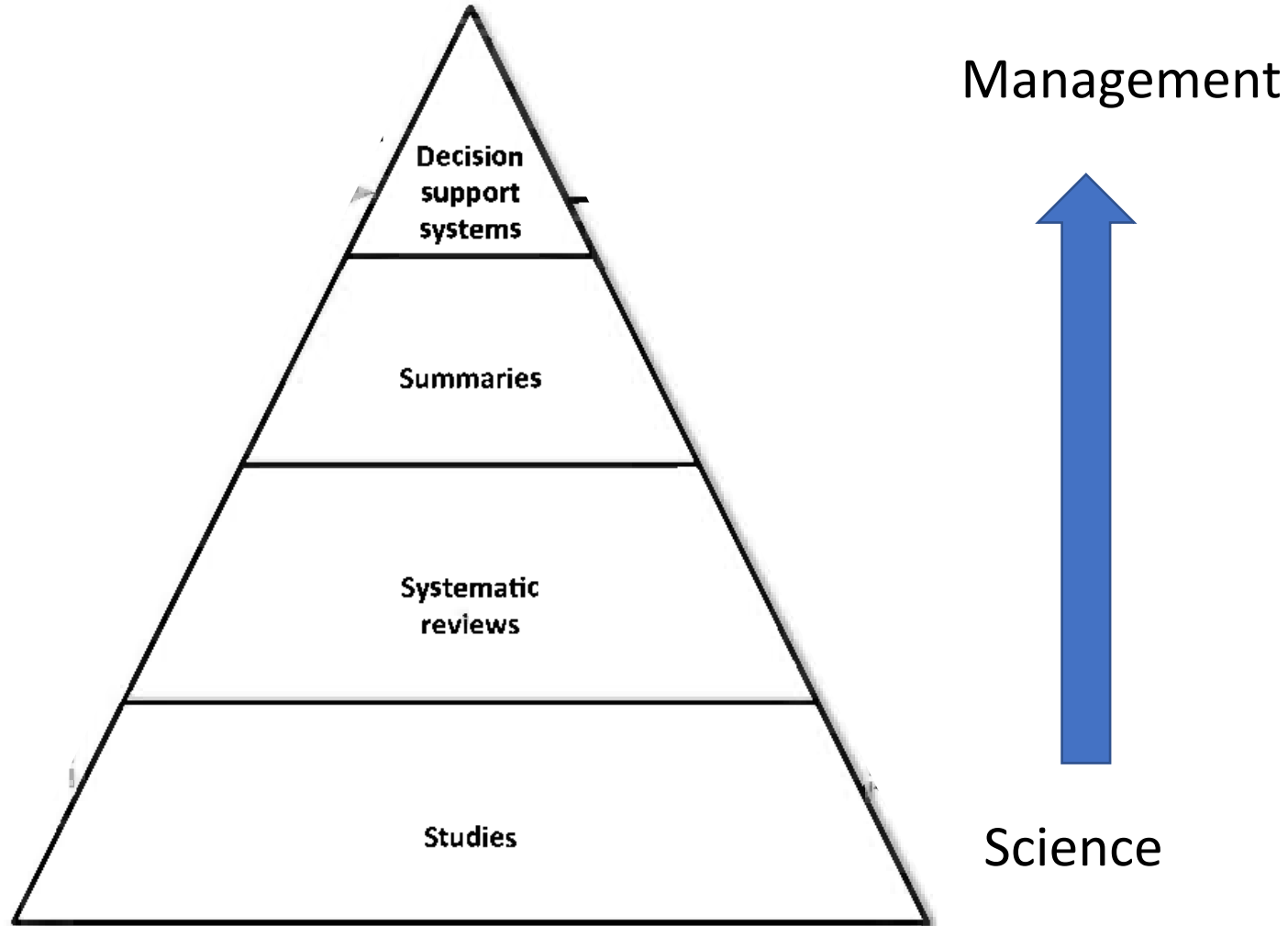
- lack of capacity and resources
- poor organisational management and structure
- no use of research in decision process
- social, political and economic context
- lack of support for advisors

Other visible phrases include:

- nature of issue
- science doesn't exist
- lack of skills to use research
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- practitioner characteristics
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- reluctant or inexperienced decision maker
- lack of awareness
- culture of researchers

Une solution pour améliorer l'utilisation de la recherche

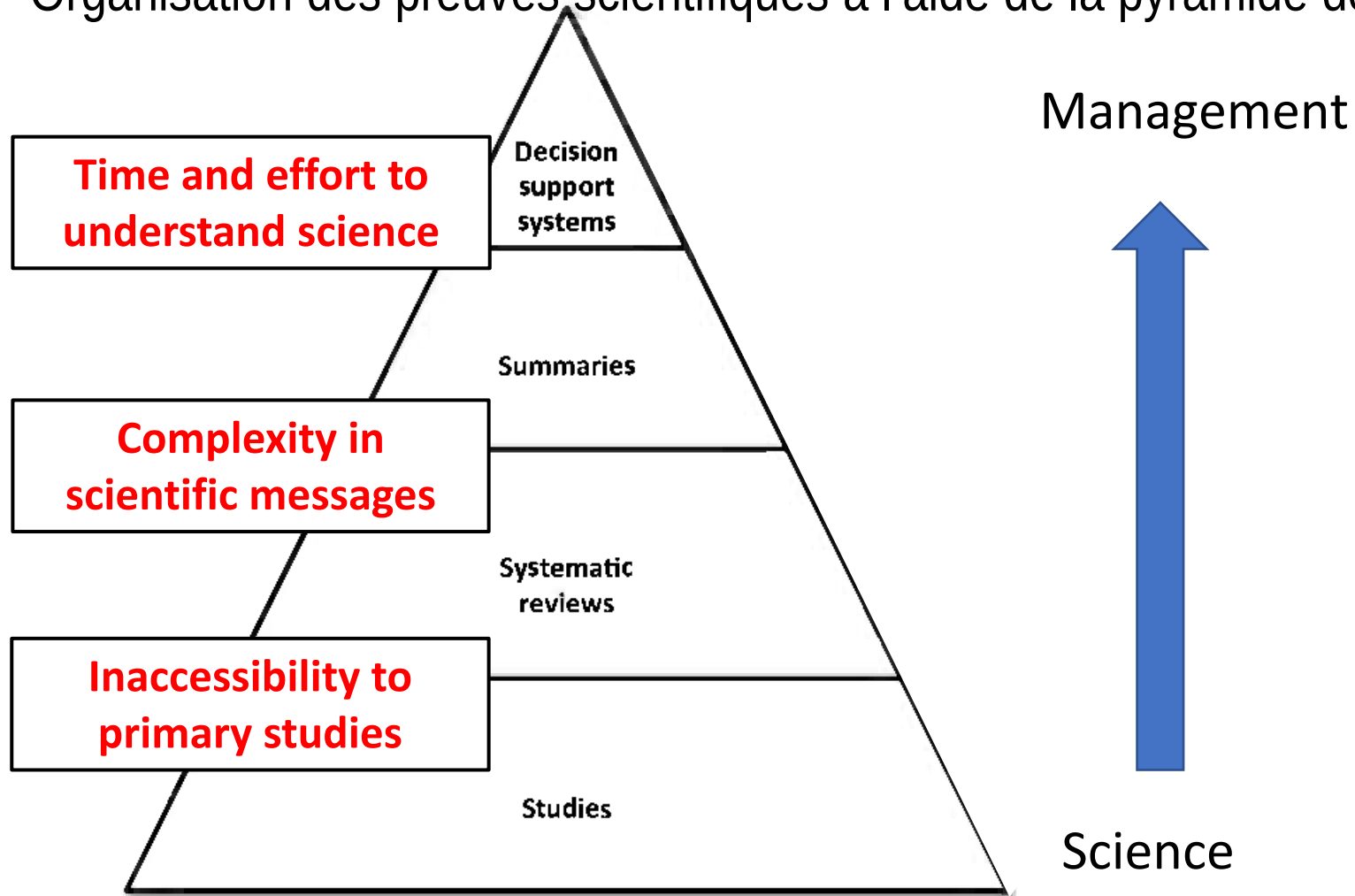
Organisation des preuves scientifiques à l'aide de la pyramide des preuves «4S»



Dicks et al. 2014 TREE

Une solution pour améliorer l'utilisation de la recherche

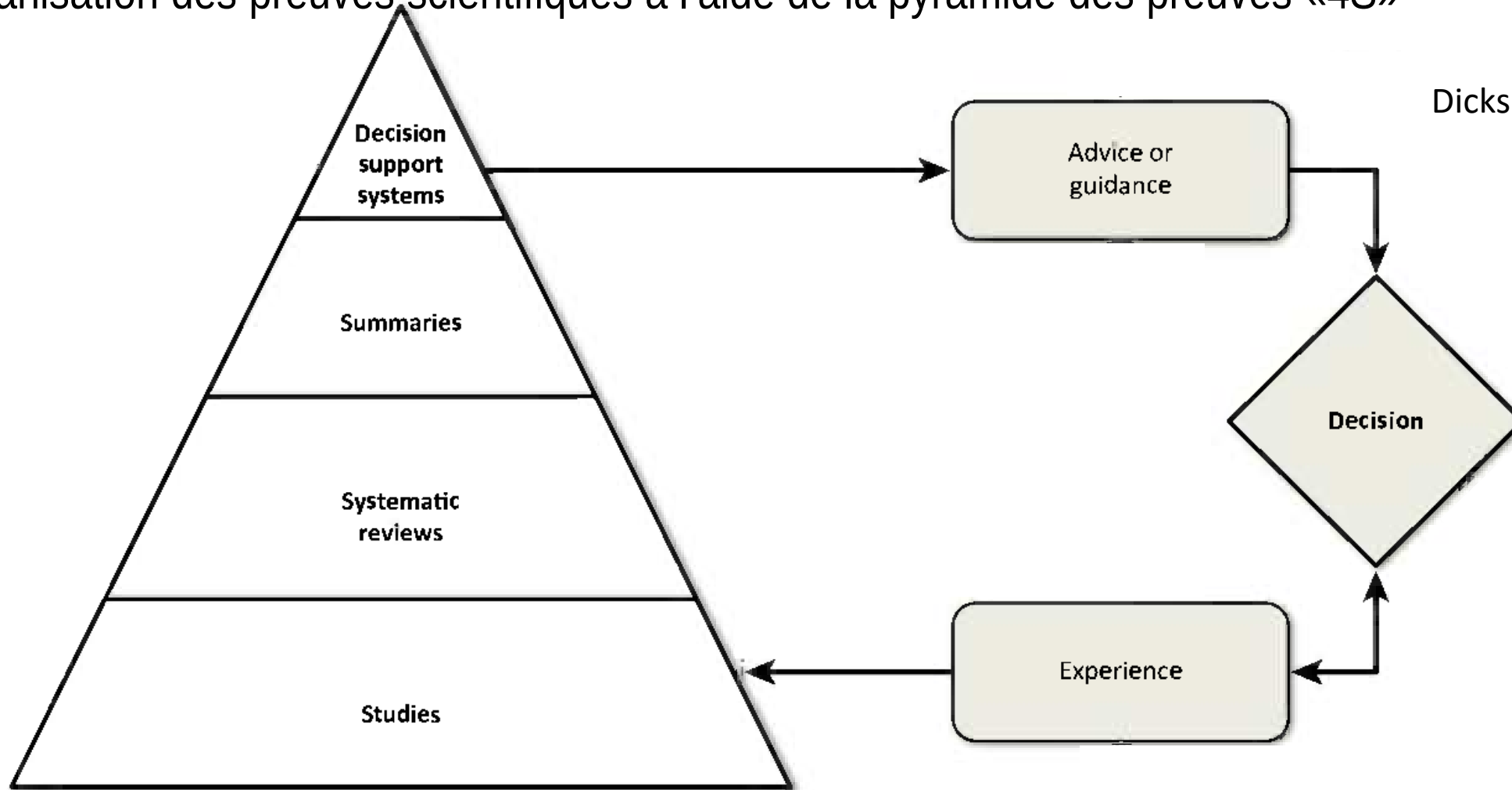
Organisation des preuves scientifiques à l'aide de la pyramide des preuves «4S»



Dicks et al. 2014 TREE

Une solution pour améliorer l'utilisation de la recherche

Organisation des preuves scientifiques à l'aide de la pyramide des preuves «4S»



Dicks et al. 2014 TREE

Revue systématique

Un examen systématique rassemble, évalue de manière critique et synthétise toutes les preuves disponibles pertinentes pour une question. Les examinateurs utilisent des méthodes prédéfinies pour minimiser les biais et fournir ainsi des résultats plus fiables qui pourraient éclairer la prise de décision.



Collaboration for
Environmental
Evidence

CAF

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Evidence Resources

CEE Evidence Syntheses

Welcome to the Environmental Evidence Library of Evidence Syntheses. This Library contains all systematic reviews and systematic maps that have been approved by CEE. In the list below, the reviews are ordered by registration number (most recent first). They are not in exact chronological order of completion date. Please scroll down to find a review or use the search tools below.

To search using titles or keywords, place terms in the box below. Add another field to search by author's name or year of completion.

Search Terms:

Find Out More

CEE Evidence Syntheses

Syntheses In Progress

EE Journal

That's a Claim!

Revue systématique: un exemple

Jakobsson et al. *Environ Evid* (2018) 7:17
<https://doi.org/10.1186/s13750-018-0129-z>

Environmental Evidence

SYSTEMATIC REVIEW

Open Access



How does roadside vegetation management affect the diversity of vascular plants and invertebrates? A systematic review

Simon Jakobsson^{1*} , Claes Bernes², James M. Bullock³, Kris Verheyen⁴ and Regina Lindborg¹

Revue systématique: un exemple

Primary question

How does roadside maintenance and restoration implementing non-chemical vegetation removal affect the diversity of vascular plants and invertebrates?

Components of the primary question

Population: roadside habitats and the species of vascular plants and invertebrates found within them.

Intervention: maintenance or restoration of roadside habitats based on non-chemical vegetation removal such as mowing, grazing, burning, clearance of shrubs and saplings, coppicing, pruning, or mechanical removal of invasive plants.

Comparator: non-intervention or alternative forms of the interventions.

Outcomes: measures of functional/taxonomic diversity (including abundance) of vascular plants or invertebrates.

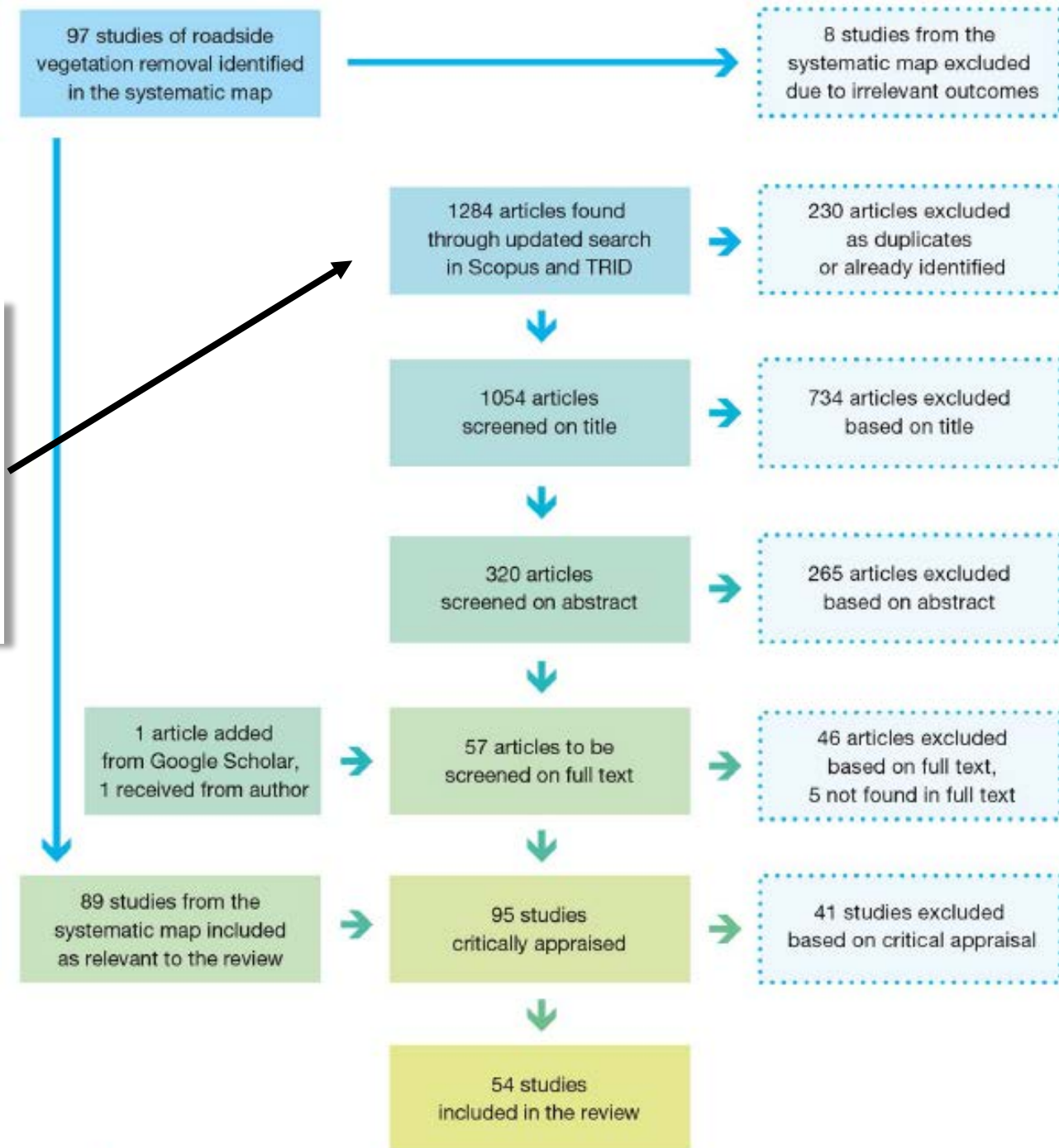


<http://www.lgam.info/roadside-mowing> CC BY-SA 3.0

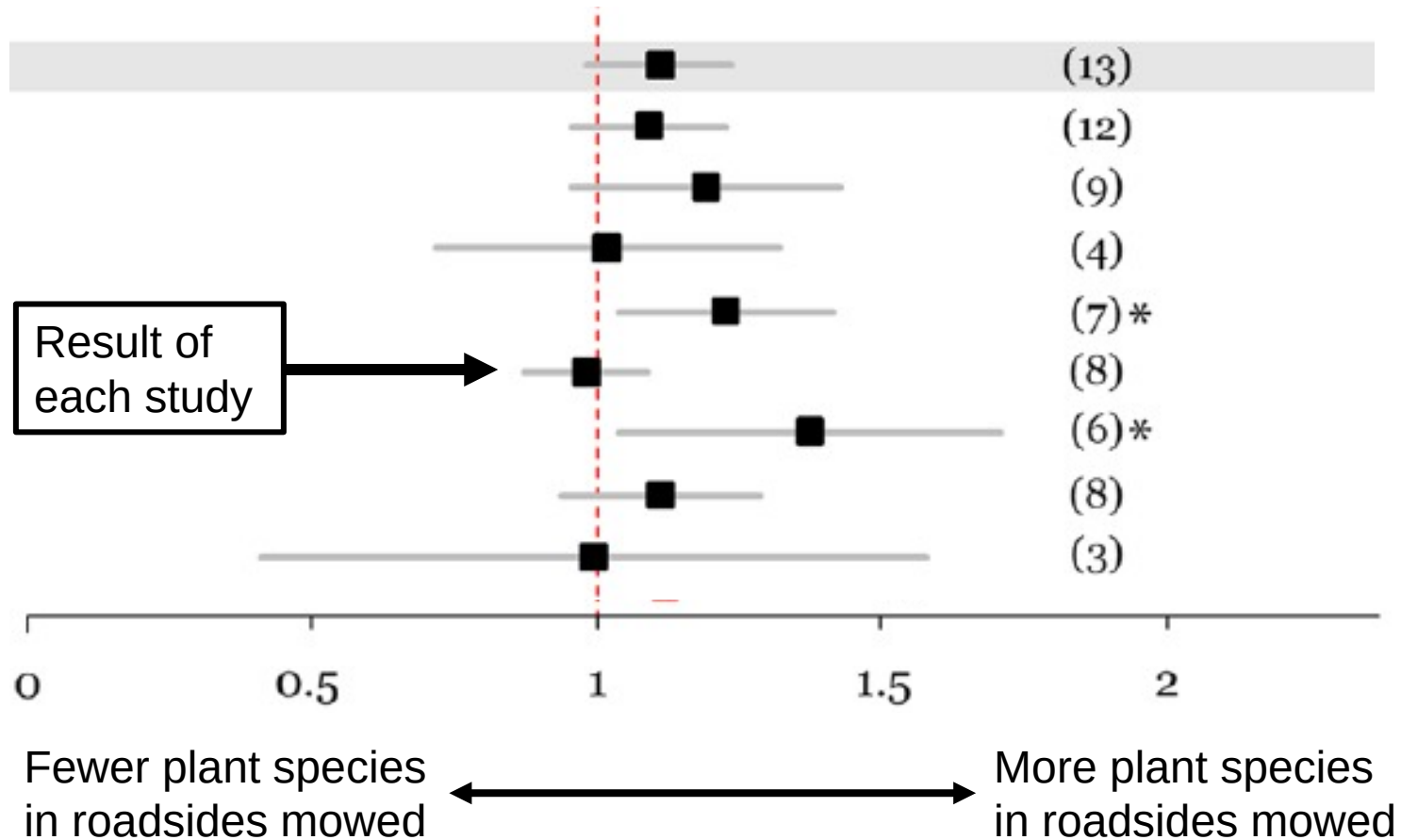
Revue systématique: un exemple

Population: roadside*, “road side*”, (road* AND (verge* OR edge*)), roundabout*, “traffic island*”, “median strip*”, “central reservation*”, boulevard*, parkway*, (avenue* AND tree*).

Outcomes: *diversity, species, abundance, vegetation.



Revue systématique: un exemple

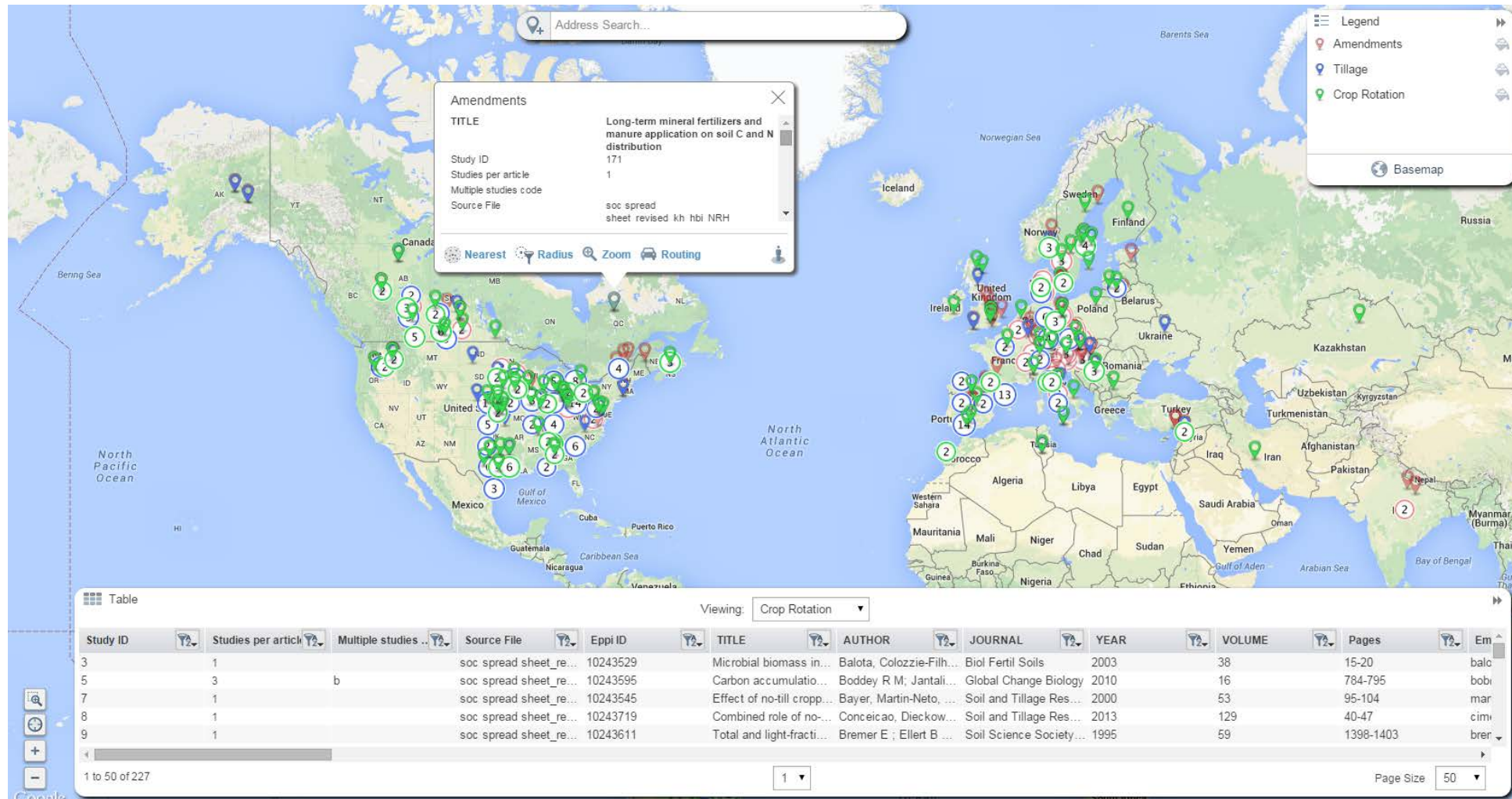


Les effets du fauchage dépendaient de l'interaction entre la fréquence de tonte et l'enlèvement du foin. Ainsi, il n'y avait aucun effet global statistiquement significatif de la tonte par rapport à l'absence de tonte.

Carte systématiques

- Un peu comme une revue systématique méthodologiquement, mais vise à identifier quelles recherches ont été menées sur un sujet
- Décrit la nature de la base de preuves
- Point de départ pour la conduite rapide de multiples revues systématiques
- Résultats clés:
 - Base de données interactive décrivant les études
 - Visualisations / récit décrivant les preuves: cartes thermiques, atlas de preuves

Example de carte systématiques



Haddaway, N.R., Hedlund, K., Jackson, L.E. *et al.* What are the effects of agricultural management on soil organic carbon in boreo-temperate systems?. *Environ Evid* 4, 23 (2015). <https://doi.org/10.1186/s13750-015-0049-0>

Collaboration pour les preuves environnementales

- Le CEE coordonne les orientations méthodologiques et la publication de revues systématiques rigoureuses et de cartes systématiques (y compris les protocoles)
- Les travaux sont basés sur la transparence, l'exhaustivité, l'objectivité procédurale

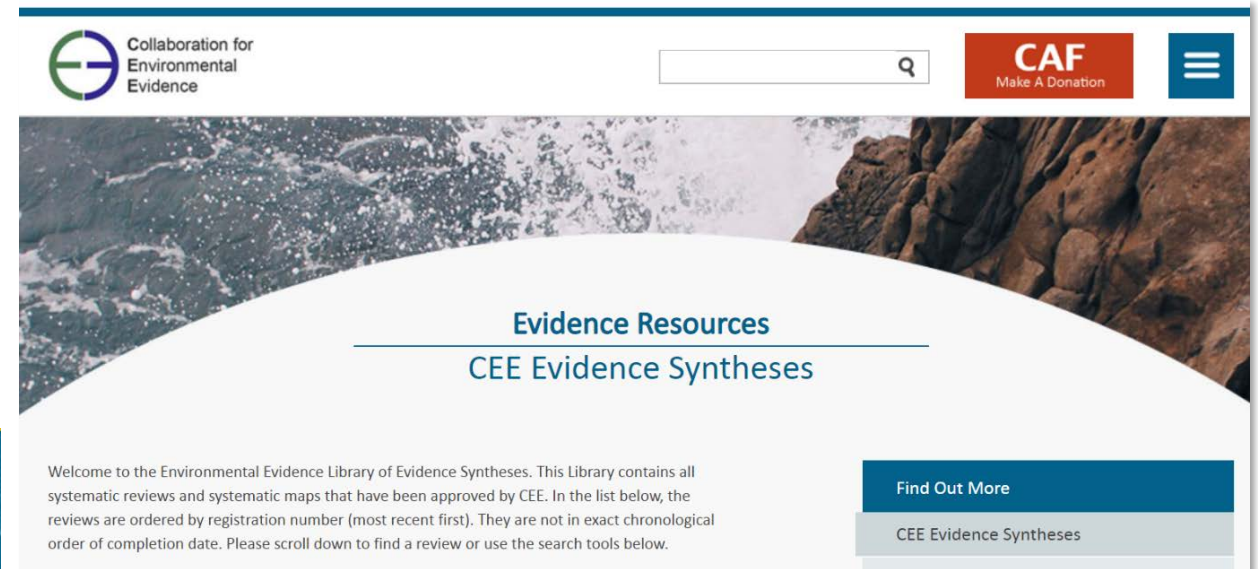


The Cochrane Collaboration



THE CAMPBELL COLLABORATION

What helps? What harms? Based on what evidence?



Projet « Preuves pour la Conservation »

Conservation Evidence

Providing evidence to improve practice

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Conservation Evidence in numbers

Over 600,000 scientific papers scanned



Click image to browse over 5,400 studies

Over 34,000 downloads of 'What Works in Conservation'



Over 1.25 million webpage views of www.conservationevidence.com



Browse by category:

 Amphibian Conservation 129 Actions	 Bat Conservation 190 Actions	 Bee Conservation 59 Actions
 Bird Conservation 454 Actions	 Control of Freshwater Invasive Species ...	 Farmland Conservation 119 Actions

See more

Projet « Preuves pour la Conservation »

Actions

Can't find what you're looking for? [You can also search Individual Studies.](#)
Not sure what Actions are? [Read a brief description.](#)

Refine results

Category
☒ Bird Conservation (454)

Keywords

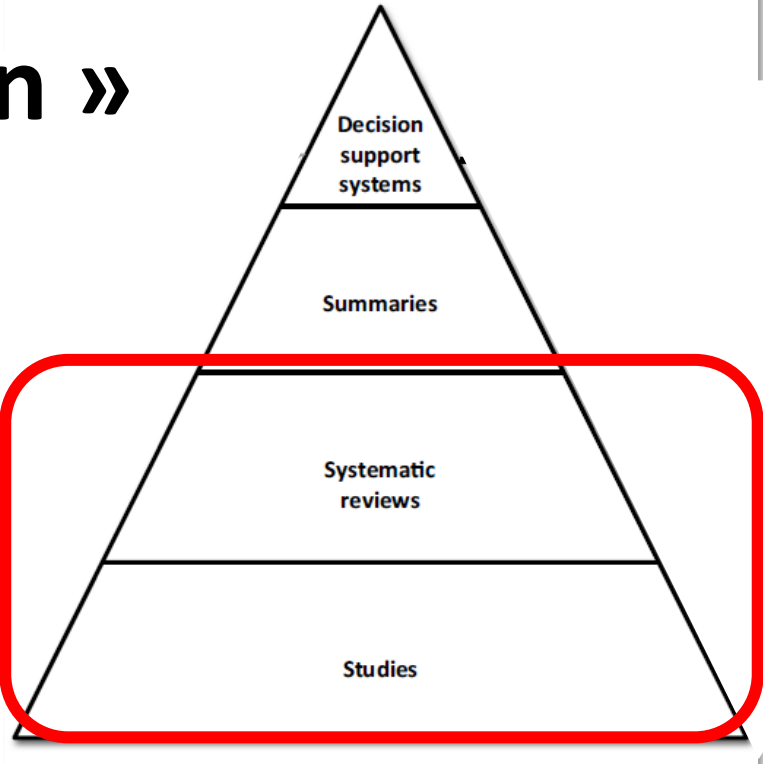
Habitat
☐ Artificial Habitats
☐ Forest & Woodland
☐ Coastal
[More ▾](#)

Threat

454 actions found

Sort by: Number of studies ▲ Relevance Title

☐ Provide artificial nesting sites for songbirds ● Beneficial Based on: 65 studies	
☐ Plant wild bird seed or cover mixture ● Beneficial Based on: 40 studies	
☐ Provide supplementary food for songbirds to increase reproductive success ● Likely to be beneficial Based on: 37 studies	
☐ Provide supplementary food for songbirds to increase adult survival ● Beneficial Based on: 34 studies	
☐ Pay farmers to cover the costs of bird conservation measures ● Likely to be beneficial Based on: 30 studies	



Projet « Preuves pour la Conservation »

Supporting evidence from individual studies

1 ↗

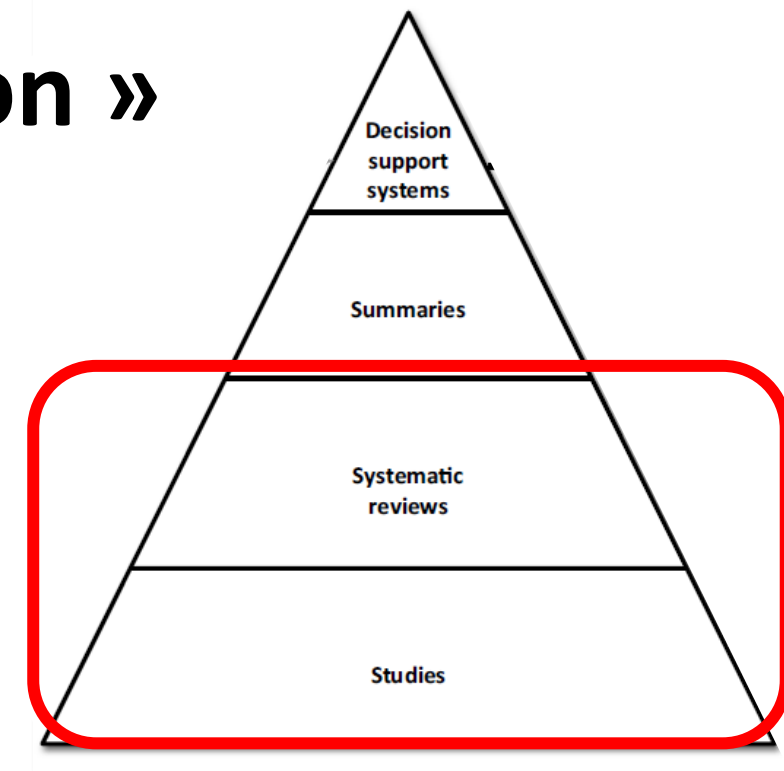
A replicated study in 1945-6 in garden habitats in Ohio, USA (Calhoun 1948), found that American robins *Turdus migratorius* nesting in artificial nests had lower success rates than those natural nests (33% success for 24 nesting attempts in artificial nests vs. 50% of 48 in natural nests). Fourteen pairs of robins used the nests, but only seven successfully raised chicks. Nests consisted of cones of black or green roofing paper 17.8 cm at the widest and 5.1 cm deep. This study also examines nest use by mourning doves *Zenaida macroura* (formerly *Zenaidura macroura*), and the effect of different coloured nests in 'Use differently-coloured artificial nests'.

2 ↗

A controlled study in mixed farmland in north-east Scotland in 1971 (Yom-Tov 1974) found that carrion crows *Corvus corone* did not nest in artificial trees, irrespective of whether they were provided with supplementary food or not. In one experiment, a line of 15 artificial trees (3-6 m branches tied to fence posts and provided with an old crow's nest) were set up, approximately 70 m apart. Two pairs of crows established territories, but neither attempted to breed. A second experiment provided a single artificial tree in two occupied territories, 70 m from the tree used by the resident pair. Neither artificial tree was used, as the resident pairs successfully defended their territories. This study also investigated the effects of supplementary feeding on crow reproduction, discussed in 'Provide supplementary food to increase reproductive success'.

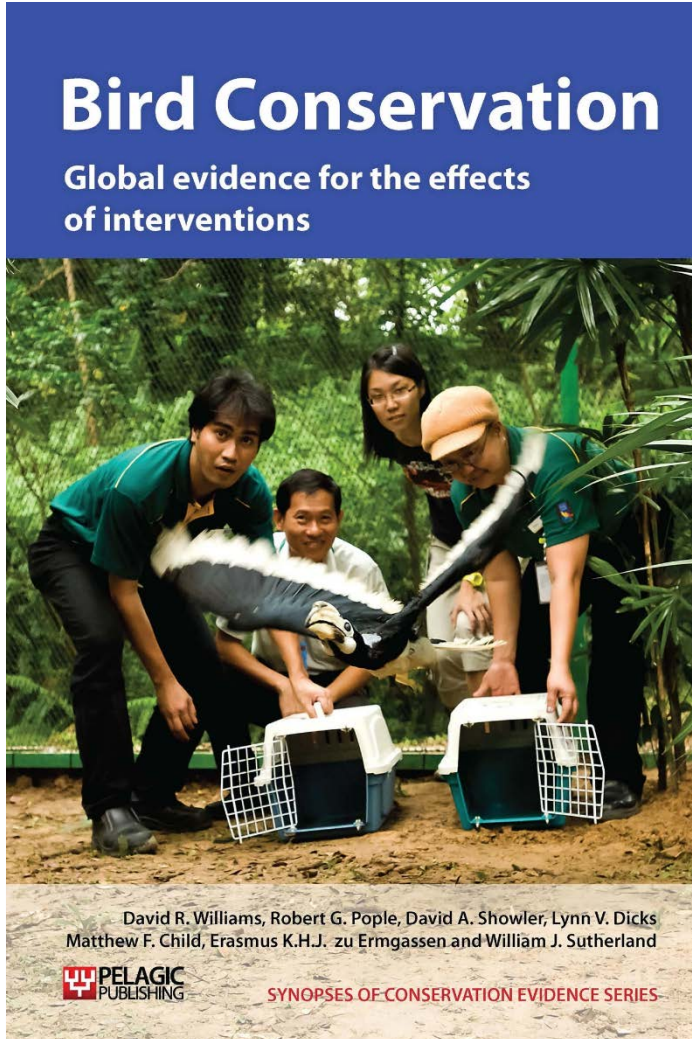
3 ↗

A small study in 1976-9 in three scrub and grassland habitats in Idaho, USA (Howard & Hilliard 1980), found that common ravens *Corvus corax* nested on nesting platforms provided, with four pairs using them in 1976, but only a single attempt in 1979. An average of 2.8 chicks/nest were produced. Twenty four platforms were provided in shaded/un-shaded pairs, with 23 out of 29 young fledged from shaded platforms. This study also discusses platform use by ferruginous hawks *Buteo regalis*, discussed in



Projet « Preuves pour la Conservation »

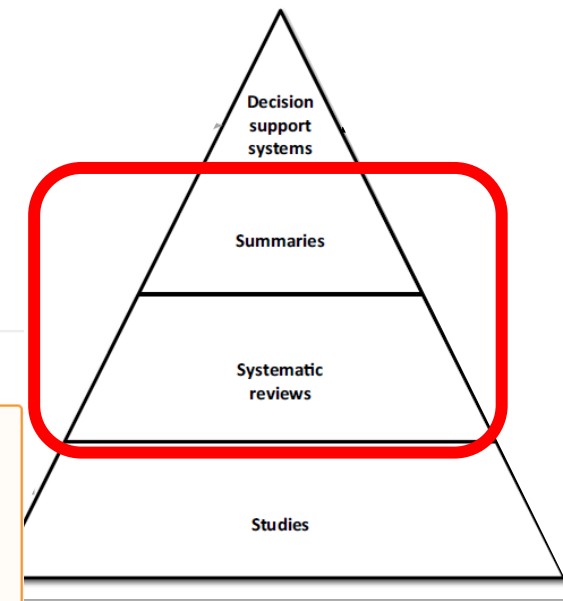
Synopses



Action: Provide artificial nesting sites for songbirds

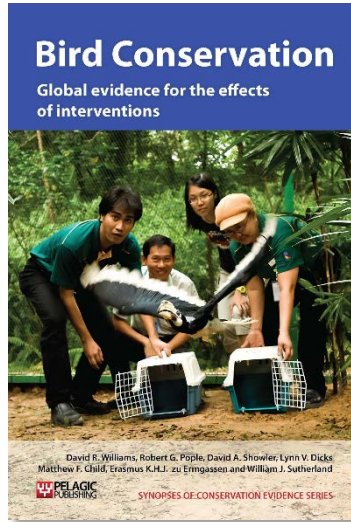
Key messages Read our guidance on Key messages before continuing

- Only three studies out of 66 from across the world found low rates of nest box occupancy, although this may be partially the result of publishing biases. Thrushes, crows, swallows and New World warblers were the target species with low rates of use. Thrushes, crows, finches, swallows, wrens, tits, Old World and tyrant flycatchers, New World blackbirds, sparrows, waxbills, starlings and ovenbirds all used nest boxes. One study from the USA found that wrens used nest boxes more frequently than natural cavities.
- Five studies from across the world found higher population densities or population growth rates in areas with nest boxes, whilst one study from the USA found higher species richness in areas with nest boxes. One study from Chile found that breeding populations (but not non-breeding populations) were higher for two species when nest boxes were provided.
- Twelve studies from across the world found that productivity of birds in nest boxes was higher or similar to those in natural nests. One study found there were more nesting attempts in areas with more nest boxes, although a study from Canada found no differences in behaviour or productivity between areas with high or low densities of nest boxes. Two studies from Europe found lower predation of some species using nest boxes. However, three studies from the USA found low production in nest boxes, either in absolute terms or relative to natural nests.
- Thirteen studies from across the world found that use, productivity or usurpation varied with nest box design, whilst seven found no difference in occupation rates or success with different designs.
- Similarly, fourteen studies found different occupation or success rates depending on the position or orientation of artificial nest sites. Two studies found no difference in success with different positions.



Projet « Preuves pour la Conservation »

454 actions



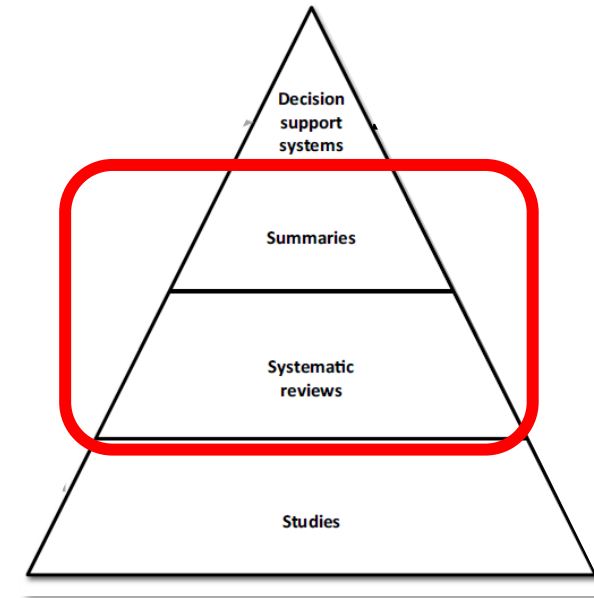
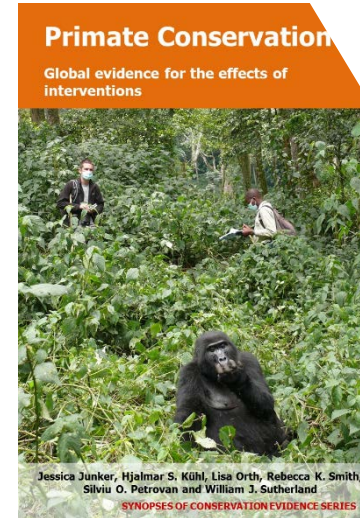
129 actions



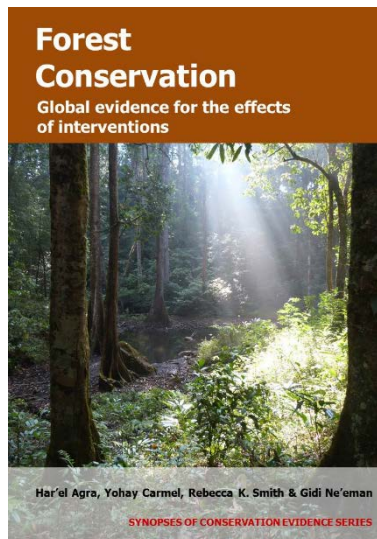
190 actions



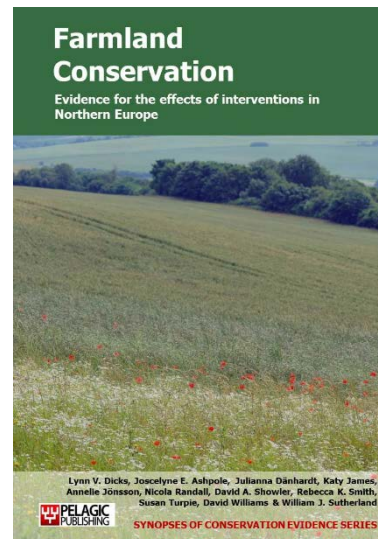
162 actions



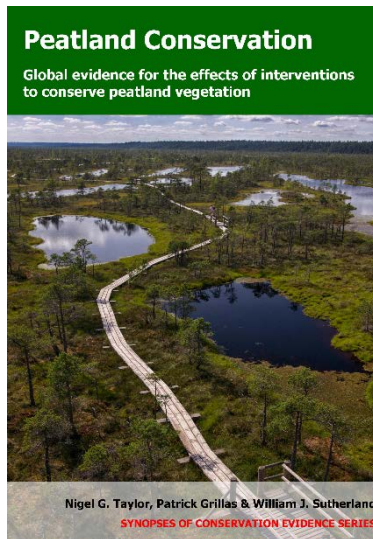
122 actions



119 actions



125 actions



161 actions



... Et visant à couvrir les actions pour tous les habitats et taxons dans un délai de quatre ans

Projet « Preuves pour la Conservation »

Action: Provide artificial nesting sites for songbirds
66 studies providing evidence

Supporting evidence from individual studies

- 1

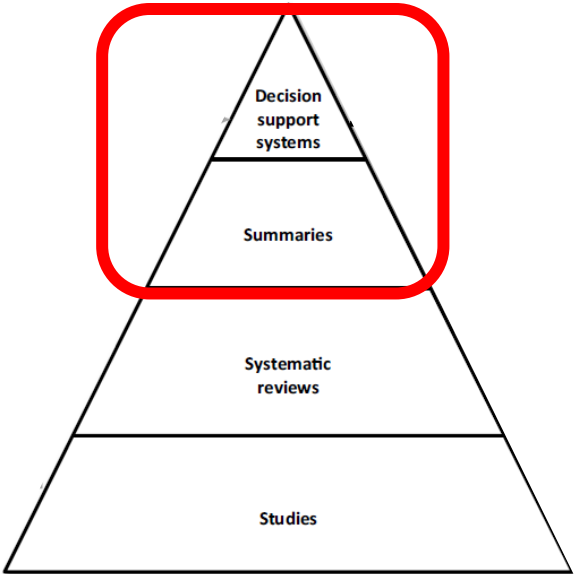
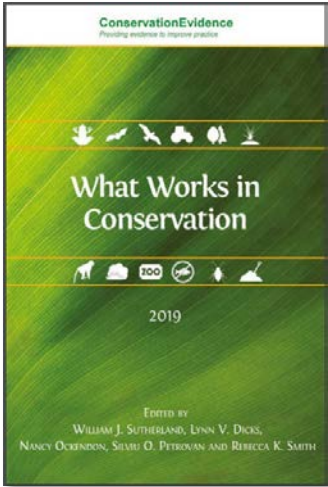
A replicated study in 1945-6 in garden habitats in Ohio, USA (Calhoun 1948), found that American robins *Turdus migratorius* nesting in artificial nests had lower success rates than those natural nests (33% success for 24 nesting attempts in artificial nests vs. 50% of 48 in natural nests). Fourteen pairs of robins used the nests, but only seven successfully raised chicks. Nests consisted of cones of black or green roofing paper 17.8 cm at the widest and 5.1 cm deep. This study also examines nest use by mourning doves *Zenaidura macroura* (formerly *Zenaidura macroura*), and the effect of different coloured nests in 'Use differently-coloured artificial nests'.
- 2

A controlled study in mixed farmland in north-east Scotland in 1971 (Yom-Tov 1974) found that carrion crows *Corvus corone* did not nest in artificial trees, irrespective of whether they were provided with supplementary food or not. In one experiment, a line of 15 artificial trees (3-6 m branches tied to fence posts and provided with an old crow's nest) were set up, approximately 70 m apart. Two pairs of crows established territories, but neither attempted to breed. A second experiment provided a single artificial tree in two occupied territories, 70 m from the tree used by the resident pair. Neither artificial tree was used, as the resident pairs successfully defended their territories. This study also investigated the effects of supplementary feeding on crow reproduction, discussed in 'Provide supplementary food to increase reproductive success'.
- 3

A small study in 1976-9 in three scrub and grassland habitats in Idaho, USA (Howard & Hilliard 1980), found that common ravens *Corvus corax* nested on nesting platforms provided, with four pairs using them in 1976, but only a single attempt in 1979. An average of 2.8 chicks/nest were produced. Twenty four platforms were provided in shaded/un-shaded pairs, with 23 out of 29 young fledged from shaded platforms. This study also discusses platform use by ferruginous hawks *Buteo borealis*, discussed in

Expert assessment
with the Delphi method

Effectiveness: 67%
Certainty: 85%
Harms: 0%



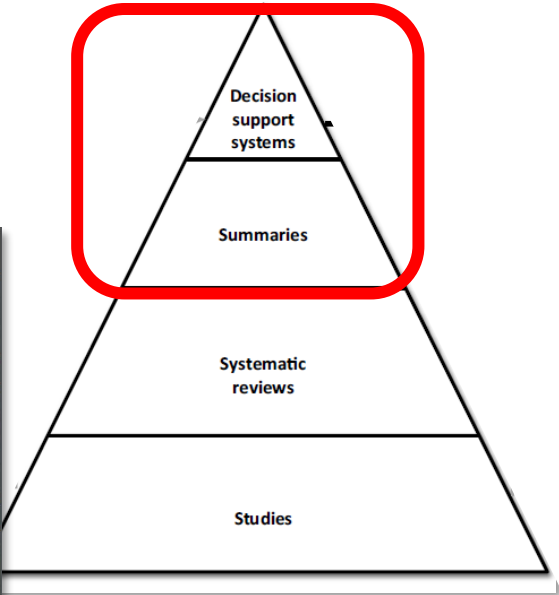
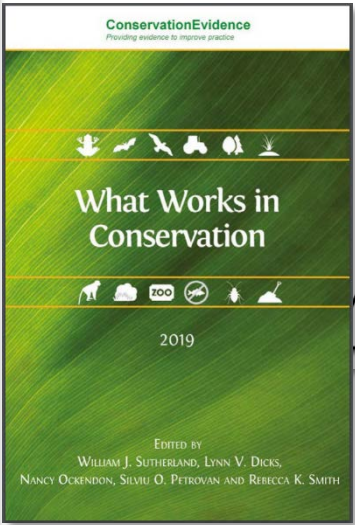
Categories	Effectiveness score	Certainty score	Harms score
Beneficial	>60	>60	<20
Likely to be beneficial	>60	40 – 60	<20
OR	40 - 60	≥40	<20
Trade-offs between benefits & harms	≥40	≥40	≥20
Unknown effectiveness	Any score	<40	Any score
Unlikely to be beneficial	<40	40-60	<20
Likely to be ineffective or harmful	<40	>60	Any score
OR	<40	≥40	≥20

Projet « Preuves pour la Conservation »

56 actions found

Sort by: Number of studies Relevance ▾ Title

☐	Provide artificial nesting sites for songbirds	● Beneficial Based on: 65 studies	
☐	Provide artificial nesting sites for raptors	● Likely to be beneficial Based on: 9 studies	
☐	Provide artificial nesting sites for woodpeckers	● Unknown effectiveness (limited evidence) Based on: 11 studies	
☐	Use vocalisations to attract birds to safe areas	● Likely to be beneficial Based on: 10 studies	
☐	Provide artificial nesting sites for wildfowl	● Beneficial Based on: 27 studies	
☐	Provide supplementary food for songbirds to increase reproductive success	● Likely to be beneficial Based on: 37 studies	



Projet « Preuves pour la Conservation »

Actions

Can't find what you're looking for? [You can also search Individual Studies.](#)

Not sure what Actions are? [Read a brief description.](#)

Refine results

Category
☒ Bird Conservation (3)
.....

Keywords

little tern

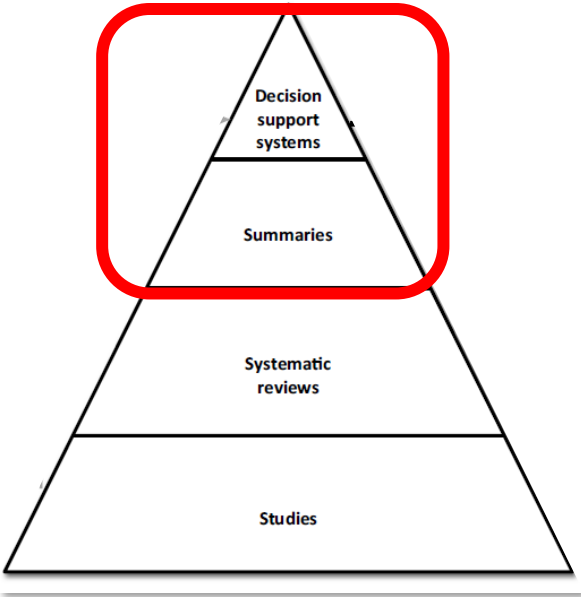
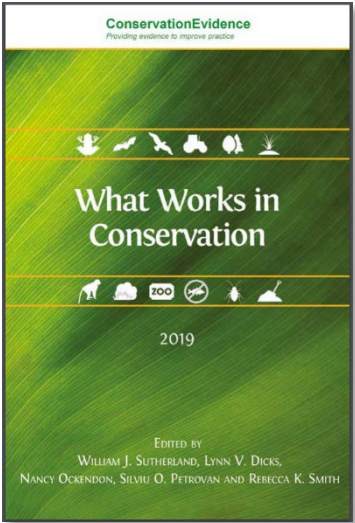
.....

Habitat

3 actions found

Sort by: Number of studies

- ☐ Physically protect nests with individual exclosures/barriers or provide shelters for chicks of ground nesting seabirds
● Likely to be beneficial | Based on: 4 studies
- ☐ Provide artificial nesting sites for ground and tree-nesting seabirds
● Likely to be beneficial | Based on: 11 studies
- ☐ Use signs and access restrictions to reduce disturbance at nest sites
● Likely to be beneficial | Based on: 10 studies



JJ Harrison CC BY-SA 3.0

Projet « Preuves pour la Conservation »

Names - common, scientific, regions etc...

Advanced

About

Assessment process

Resources & Publications

Eurasian Curlew

Numenius arquata

CITATION
BirdLife International
e.T22693190A1
3.RLTS.T226931

Download

NOT EVALUATED
NE

DATA DEFICIENT
DD

LEAST CONCERN
LC

NEAR THREATENED
NT

VULNERABLE
VU

POPULATION TREND
Decreasing

NUMBER OF MATURE INDIVIDUALS
Population in detail

HABITAT AND ECOLOGY

Images and External Links

CITES Legislation from Species+

Conservation Evidence

Expand all

Studies and Actions from Conservation Evidence

DATA SOURCE
The information below is from the Conservation Evidence website.

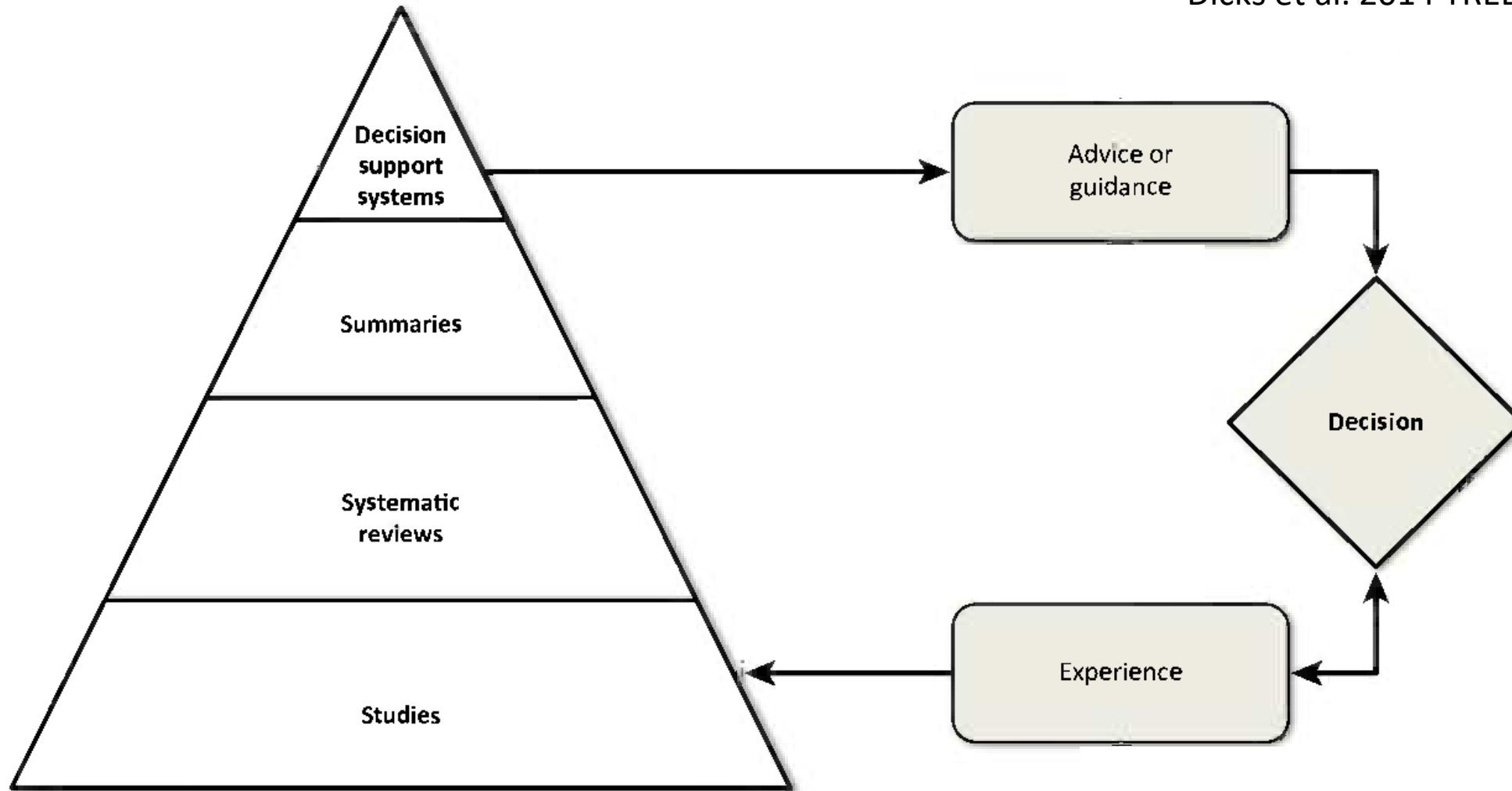
▼ Studies and Actions from Conservation Evidence in detail

SEARCH TERM: "NUMENIUS ARQUATA" (SHOWING 8 OF 8)

Studies	Actions
Nest predation and numbers of golden plovers <i>Pluvialis apricaria</i> and other moorland waders Show	Control predators not on islands for waders Show
Artificial feeding to attract wild birds close to a viewing area at Belfast Lough RSPB Reserve, Antrim, Northern Ireland Show	- Provide supplementary food for waders to increase adult survival Show - Provide supplementary food for wildfowl to increase adult survival Show
Botanical monitoring of restored lowland wet grassland at Campfield Marsh RSPB Reserve, Cumbria, England Show	- Raise water levels in ditches or grassland Show - Raise water levels in ditches or grassland Show
Rush cutting to create nesting patches for lapwings <i>Vanellus vanellus</i> and other waders, Lower Lough Erne RSPB reserve, County Fermanagh, Northern Ireland Show	Mow or cut semi-natural grasslands/pastures Show
The effectiveness of different methods to deter large gulls <i>Larus</i> spp. from competing with nesting terns <i>Sterna</i> spp. on Coquet Island RSPB reserve, Northumberland, England Show	Reduce inter-specific competition for nest sites of ground nesting seabirds by removing competitor species Show
The recent declines of farmland bird populations in Britain: an appraisal of causal factors and conservation actions Show	- Pay farmers to cover the cost of conservation measures (as in agri-environment schemes) Show - Pay farmers to cover the costs of bird conservation measures Show
Some effects of set-aside on breeding birds in northeast Scotland Show	- Provide or retain set-aside areas in farmland Show - Provide or retain set-aside areas in farmland Show
Habitat restoration for curlew <i>Numenius arquata</i> at the Lake Vyrnwy reserve, Wales Show	

Résumé de la synthèse des preuves

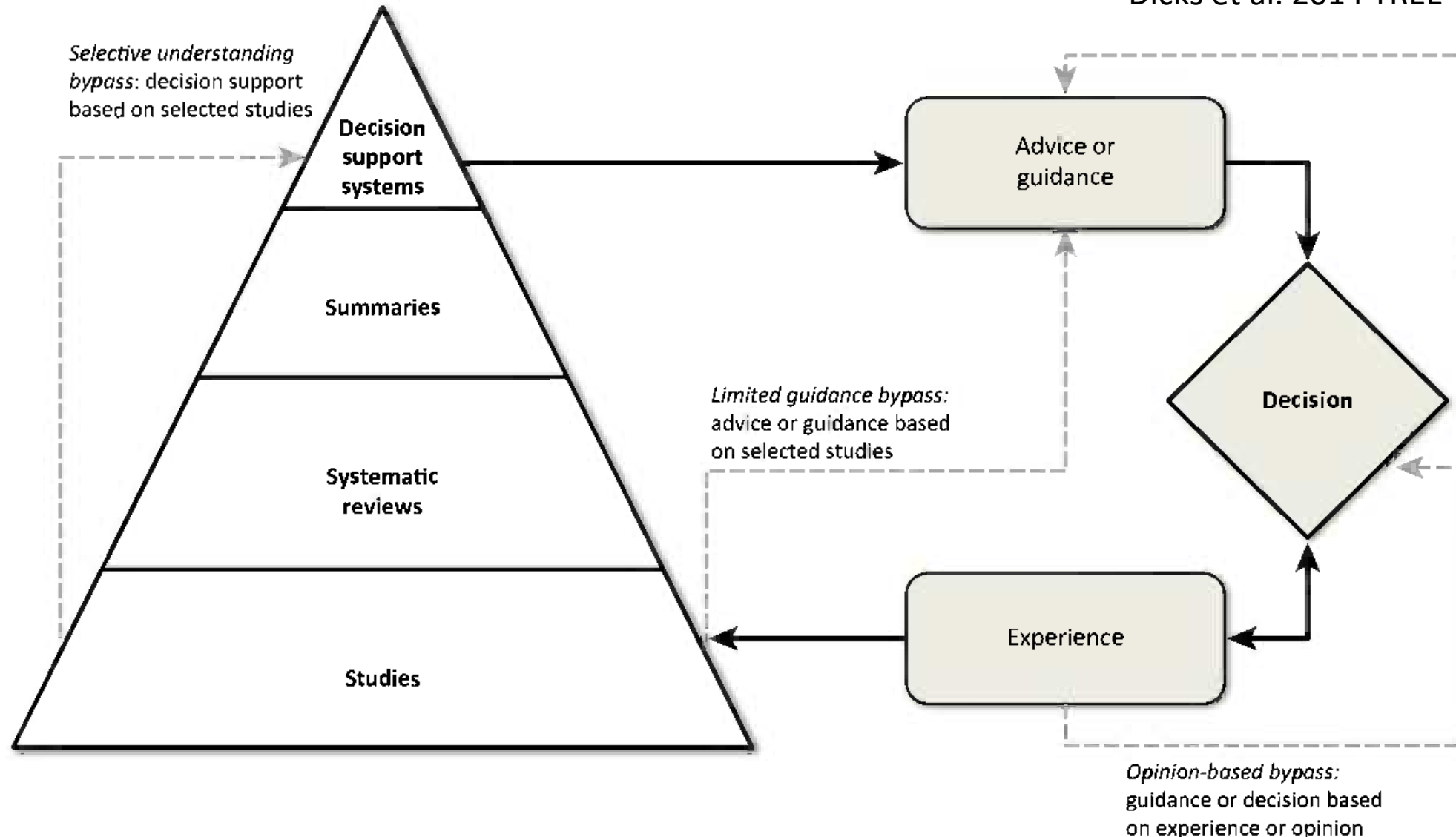
Dicks et al. 2014 TREE



Résumé de la synthèse des preuves

(and some bypasses to avoid)

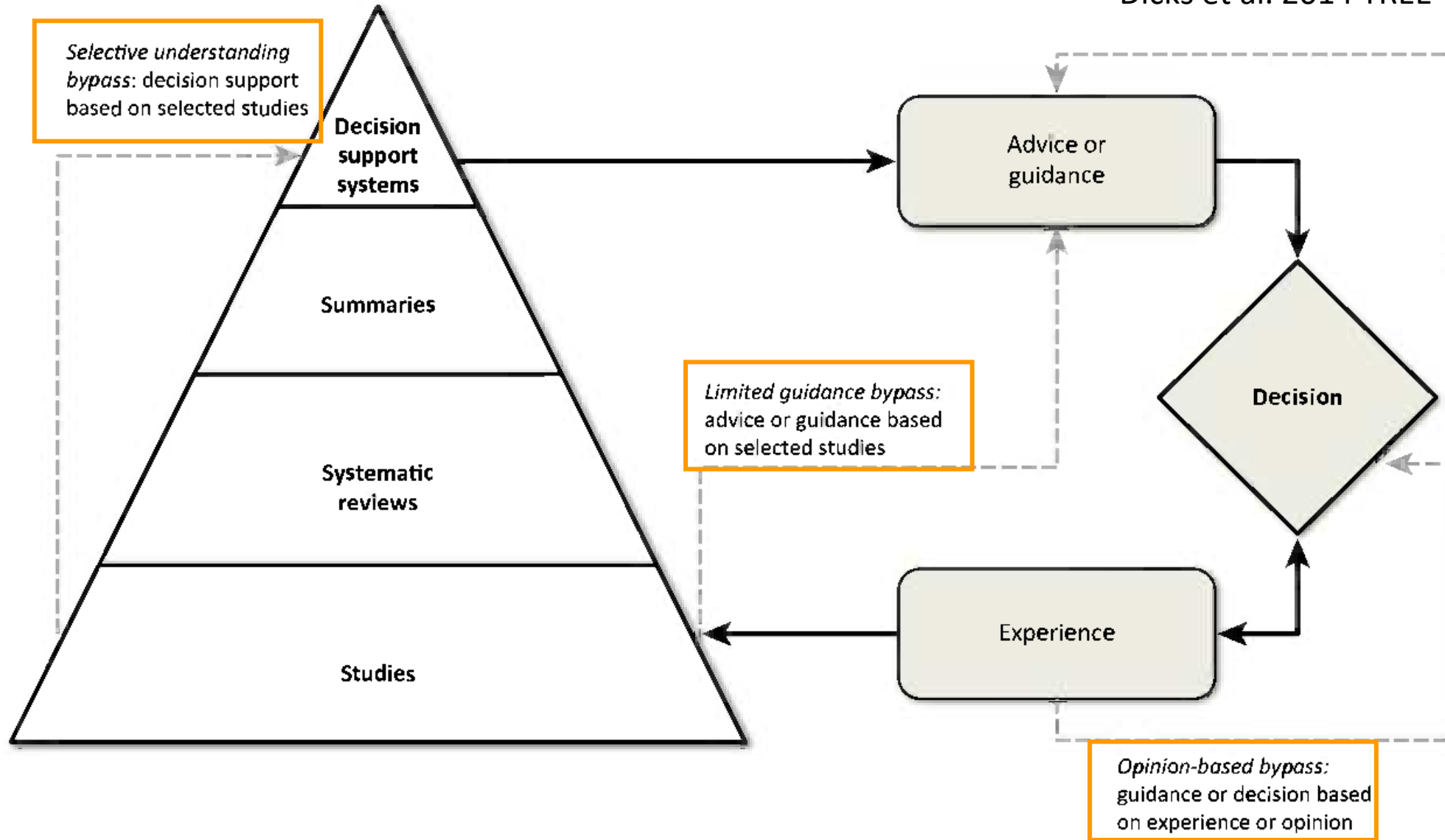
Dicks et al. 2014 TREE



Résumé de la synthèse des preuves

(and some bypasses to avoid)

Dicks et al. 2014 TREE



Défis de la synthèse des preuves

 Collaboration for Environmental Evidence

CAF
Make A Donation

☰



Evidence Resources

CEE Evidence Syntheses

Welcome to the Environmental Evidence Library of Evidence Syntheses. This Library contains all systematic reviews and systematic maps that have been approved by CEE. In the list below, the reviews are ordered by registration number (most recent first). They are not in exact chronological order of completion date. Please scroll down to find a review or use the search tools below.

To search using titles or keywords, place terms in the box below. Add another field to search by author's name or year of completion.

Find Out More

CEE Evidence Syntheses

Syntheses In Progress

EE Journal

That's a Claim!

Conservation Evidence

Providing evidence to improve practice



Browse Evidence

Journal

About us

Resources

Conservation Evidence in numbers

Over 600,000 scientific papers scanned



Click image to browse over 5,400 studies

Over 34,000 downloads of 'What Works in Conservation'



Over 1.25 million webpage views of www.conservationevidence.com



Browse by category:



Amphibian Conservation

129 Actions



Bat Conservation

190 Actions



Bee Conservation

59 Actions



Bird Conservation

454 Actions



Control of Freshwater Invasive Species



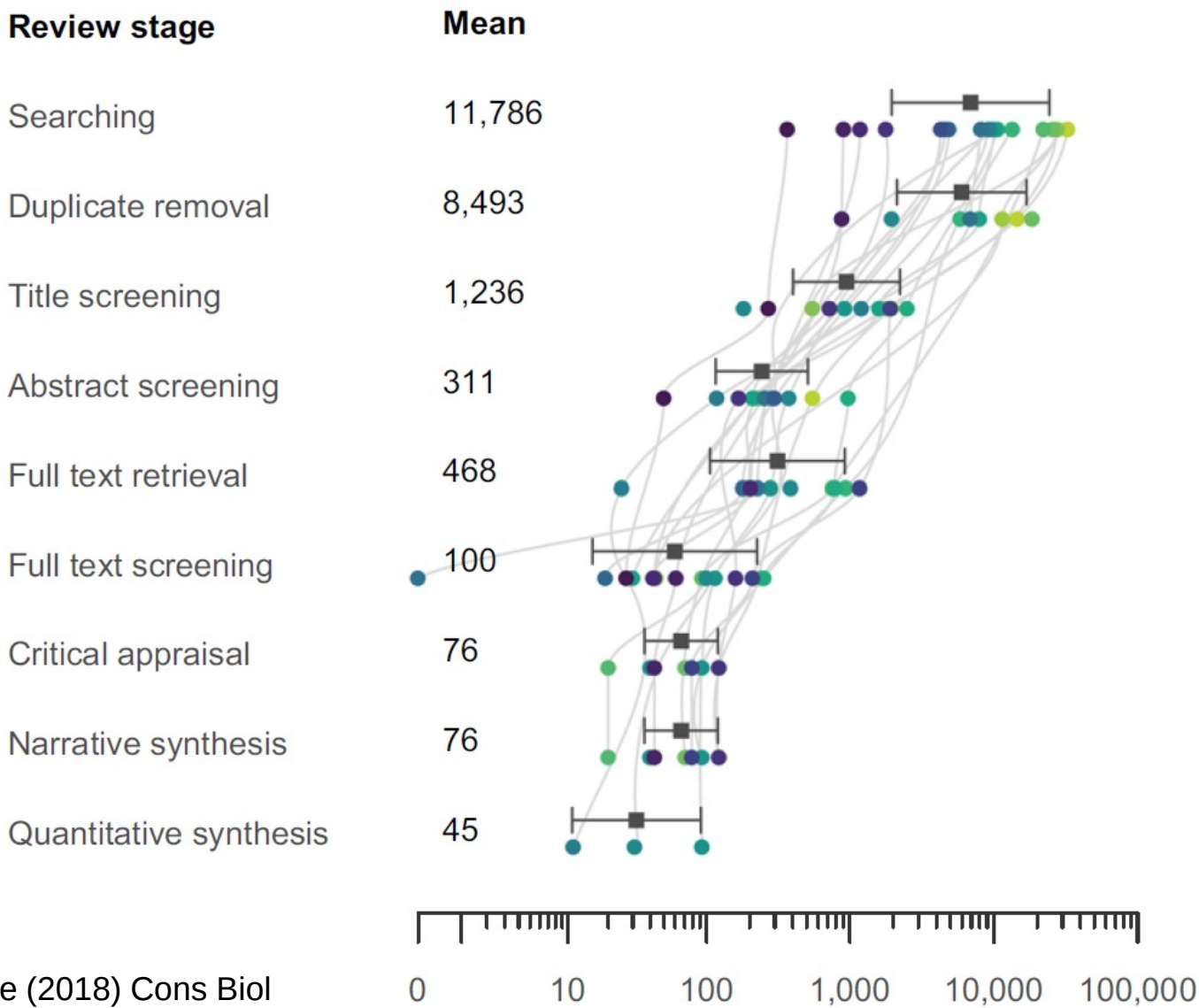
Farmland Conservation

119 Actions

See more

Défis: temps et efforts

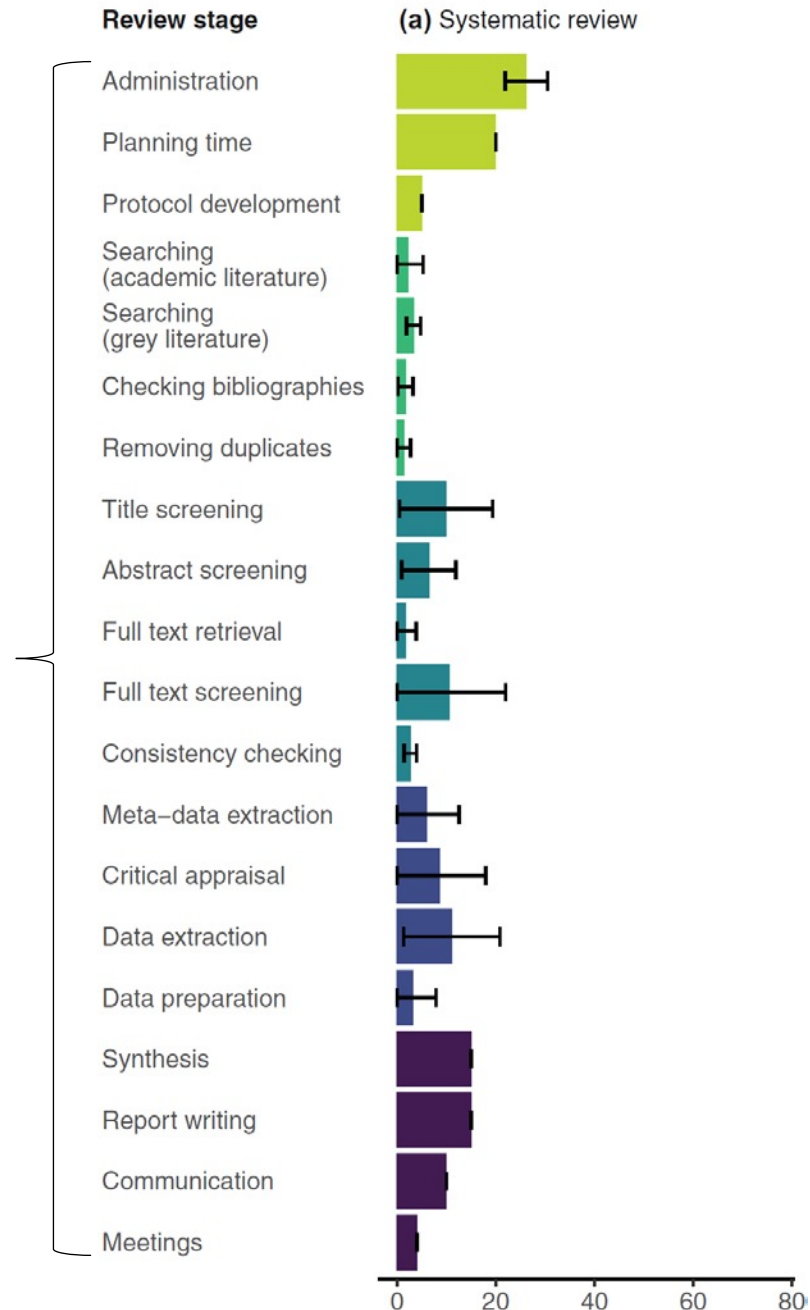
Number of articles processed at each stage of a systematic review



Défis: temps et efforts

Nombre de jours requis pour chaque étape d'une revue systématique

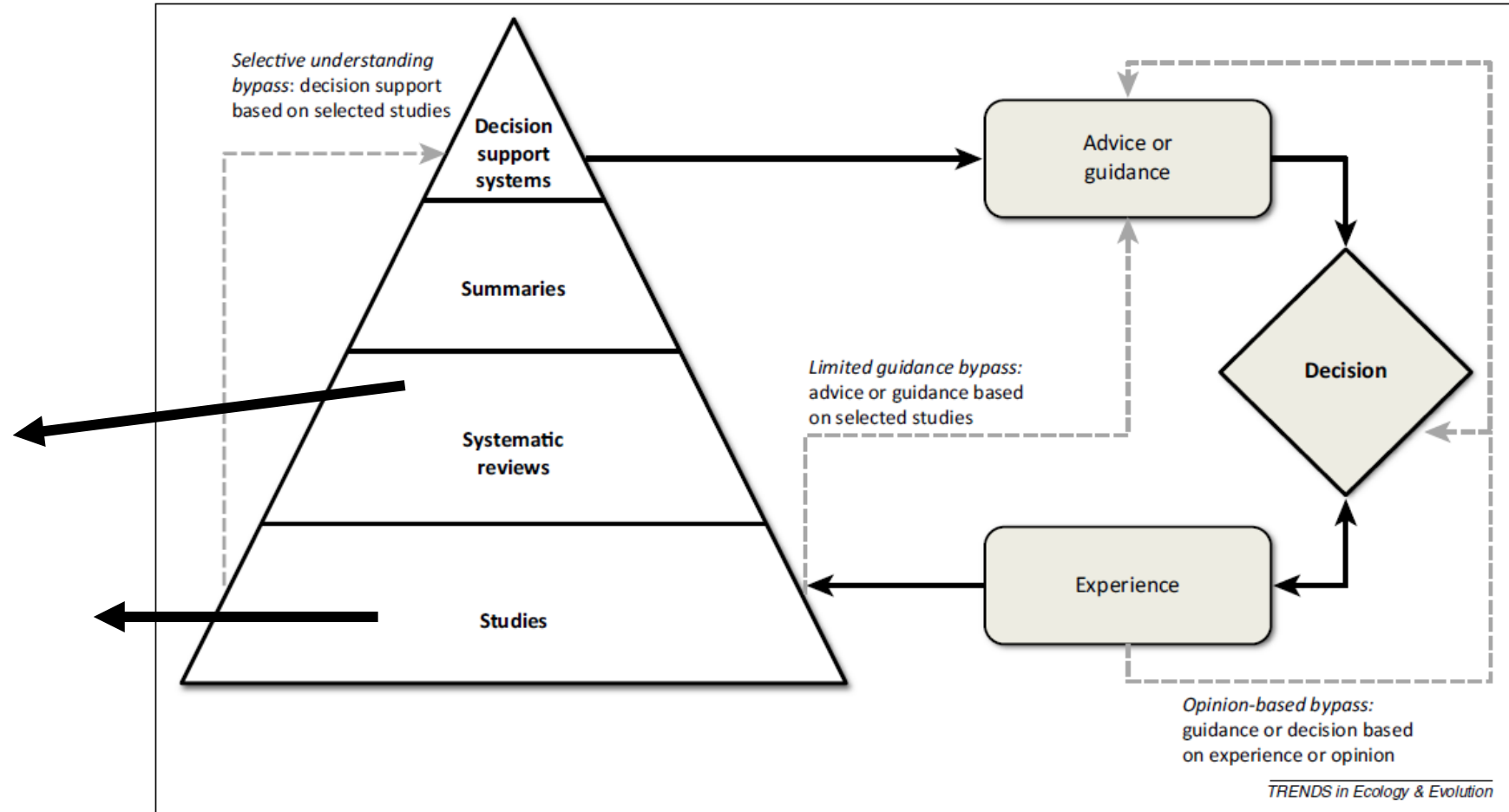
164 jours-personnes à temps plein
pour répondre à une question
comme:
*La gestion de la végétation en
bordure de route affecte-t-elle la
biodiversité?*



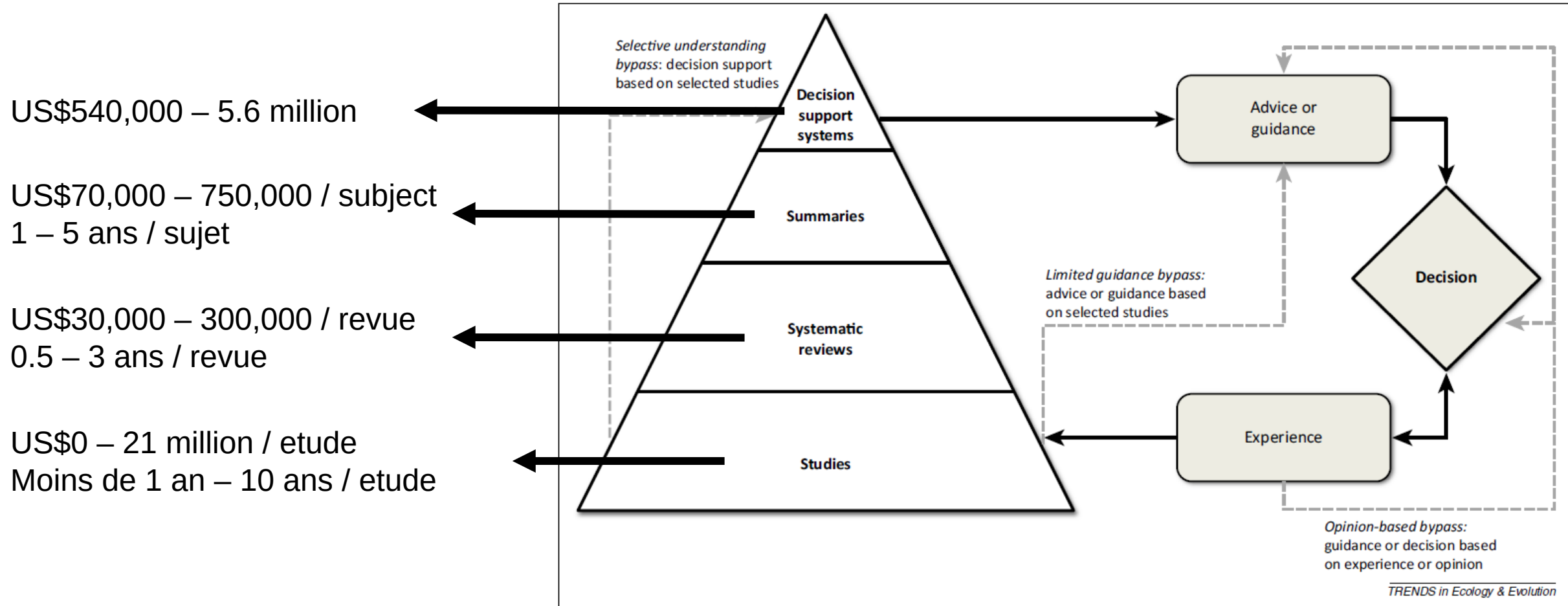
Défis: temps et efforts

US\$30,000 – 300,000 / revue
systematique
0.5 – 3 ans / revue
systematique

US\$0 – 21 million / etude
Moins de 1 an – 10 ans / etude



Défis: temps et efforts



Défis: lacunes d'information spatiale

Action: Provide artificial nesting sites for songbirds



Key messages [Read our guidance on Key messages before continuing](#)

- Only three studies out of 66 from across the world found [low rates](#) of nest box occupancy, although this may be partially the result of publishing biases. Thrushes, crows, swallows and New World warblers were the target species with low rates of use. Thrushes, crows, finches, swallows, wrens, tits, Old World and tyrant flycatchers, New World blackbirds, sparrows, waxbills, starlings and ovenbirds all used nest boxes. One study from the [USA](#) found that wrens used nest boxes more frequently than natural cavities.
- [Five studies](#) from across the world found higher population densities or population growth rates in areas with nest boxes, whilst one study from the [USA](#) found higher species richness in areas with nest boxes. One study from [Chile](#) found that breeding populations (but not non-breeding populations) were higher for two species when nest boxes were provided.
- [Twelve studies](#) from across the world found that productivity of birds in nest boxes was higher or similar to those in natural nests. One [study](#) found there were more nesting attempts in areas with more nest boxes, although a study from [Canada](#) found no differences in behaviour or productivity between areas with high or low densities of nest boxes. Two studies from [Europe](#) found lower predation of some species using nest boxes. However, three studies from the [USA](#) found low production in nest boxes, either in absolute terms or relative to natural nests.
- Thirteen studies from across the world found that [use](#), [productivity](#) or [usurpation](#) varied with nest box design, whilst seven found no difference in [occupation rates](#) or [success](#) with different designs.

Overall Effectiveness Category:

Beneficial

Effectiveness: 67%

Certainty: 85%

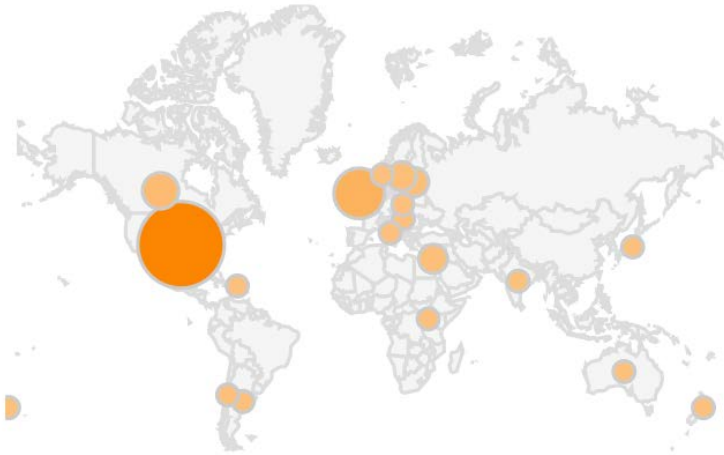
Harms: 0%

Where has this evidence come from?

Bird Conservation
[View all](#)

Click [here](#) to see the list of journals searched for this synopsis, and [here](#) to see all the journals searched for all synopses.

Source countries



Défis: lacunes d'information spatiale



Actions

Can't find what you're looking for? [You can also search Individual Studies.](#)
Not sure what Actions are? [Read a brief description.](#)

Refine results

Category

☒ Bird Conservation (36)

Keywords

skylark

Habitat

- ☐ Artificial Habitats
- ☐ Grassland
- ☐ Wetlands

[More](#) ▼

Threat

- ☐ Agriculture & aquaculture
- ☐ Natural system modifications

36 actions found

- ☐ Create skylark plots for bird conservation
 - Likely to be beneficial | Based on: 7 studies
- ☐ Provide or retain set-aside areas in farmland
 - Beneficial | Based on: 22 studies
- ☐ Leave overwinter stubbles
 - Likely to be beneficial | Based on: 14 studies
- ☐ Raise mowing height on grasslands to benefit birds
 - Unknown effectiveness (limited evidence) | Based on: 2 studies
- ☐ Plant nectar flower mixture/wildflower strips for birds
 - Likely to be beneficial | Based on: 7 studies
- ☐ Use mowing techniques to reduce chick mortality
 - Likely to be beneficial | Based on: 3 studies

Défis: lacunes d'information spatiale



Actions

Can't find what you're looking for? [You can also search Individual Studies.](#)
Not sure what Actions are? [Read a brief description.](#)

Refine results

Category

☒ Bird Conservation (36)

Keywords

skylark

Habitat

- ☐ Artificial Habitats
☐ Grassland
☐ Wetlands

[More](#)

Threat

- ☐ Agriculture & aquaculture
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36 actions found

- ☐ Create skylark plots for bird conservation
Likely to be beneficial | Based on: 7 studies
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- ☐ Plant nectar flower mixture/wildflower strips for birds
Likely to be beneficial | Based on: 7 studies
- ☐ Use mowing techniques to reduce chick mortality
Likely to be beneficial | Based on: 3 studies

Action: Provide or retain set-aside areas in farmland

Key messages [Read our guidance on Key messages before continuing](#)

- [Three replicated studies](#) and a review of five studies from Europe and North America examining species richness or diversity found that more species were found on set-aside than on crops. [One](#) found fewer species on set-aside than other agricultural habitats.
- All 21 studies, including a systematic review, 12 replicated experiments and two reviews, from Europe and North America that investigated population trends or habitat associations found that some species were found at higher densities or used set-aside more than other habitats, or were found on [set-aside](#). [Four studies](#) (three replicated) from the UK found that some species were found at lower densities on set-aside compared to other habitats.
- [Three](#) of four replicated studies from the UK found that waders and Eurasian skylarks had higher productivities on set-aside, compared to other habitats. [One study](#) found that skylarks nesting on set-aside had lower productivity compared to those on cereal crops, and similar productivities to those on other crops.
- [One replicated paired study](#) from the UK found that rotational set-aside was used more than non-rotational set-aside, [a replicated paired study](#) found no differences between rotational and non-rotational set-aside. A [review](#) from Europe and North America found that naturally regenerated set-aside held more birds and more species than sown set-aside.

Background information and definitions

Allocation of some farmland to 'set-aside' (fields taken out of production) was compulsory under European agricultural policy from 1992 until 2008. Originally intended as a method of reducing production, set-aside has also been promoted as a way of protecting on-field biodiversity. Set-aside fields can be sown with fallow crops or left to naturally regenerate. Set-aside can be rotational (in a different place every year) or long term (retained for 5–20 years).

A 2008 literature review of the Environmental Stewardship programme, particularly Entry Level Stewardship (ELS) in the UK (Vickery *et al.* 2008) found that the population trends of all Farmland Bird Index species were positively correlated with the availability of set-aside in that year and that Entry Level Stewardship may not be able to effectively replace set-aside.

Overall Effectiveness Category:

Beneficial

Effectiveness: 70%

Certainty: 75%

Harms: 0%

Where has this evidence come from?

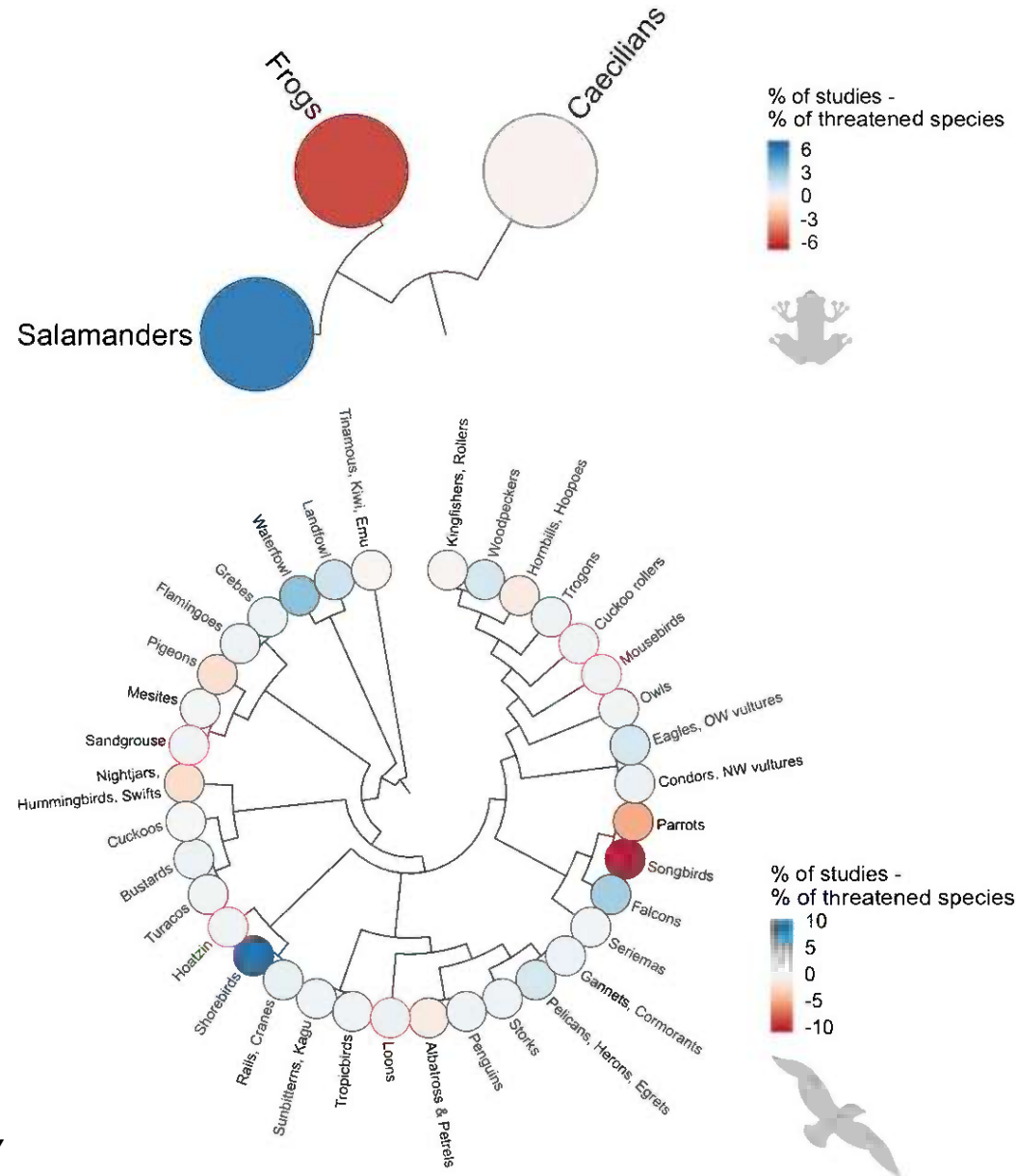
 Bird Conservation
[View all](#)

Click [here](#) to see the list of journals searched for this synopsis, and [here](#) to see all the journals searched for all synopses.

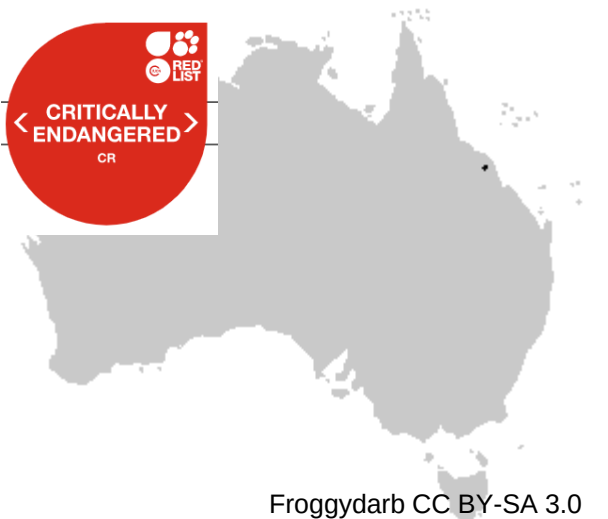
Source countries



Défis: lacunes dans les informations taxonomiques



Défis: lacunes dans les informations taxonomiques



Eungella Torrent Frog (*Taudactylus eungellensis*)

Actions

Can't find what you're looking for? [You can also search Individual Studies.](#)

Not sure what Actions are? [Read a brief description.](#)

Refine results

Category

Keywords

Taudactylus eungellensis

Habitat

Threat

Action type

0 actions found

No action results

Sorry, your search didn't return any action pages. Please consider the following tips:

- Start with broad search terms, refining your search using the panel on the left
- If you're looking for evidence about a particular species, try searching at the genus or family level
- Check your spelling
- You can also search [Individual Studies.](#)
- Bear in mind that the Conservation Evidence project is a **work in progress**. We have actively collected evidence on a range of specific topics, as shown on the [Synopsis page](#). Beyond these subjects our coverage may be less thorough.

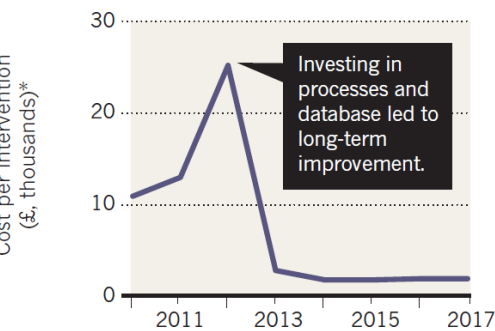
Results per page 25 ▼

Surmonter les défis de la synthèse des preuves

COST-EFFECTIVE

Manually searching journals to find studies on actions designed to conserve species is costly at first. But as the searches accumulate, subsequent evidence syntheses require fewer resources.

Spending per intervention



New journals searched and conservation actions accessed

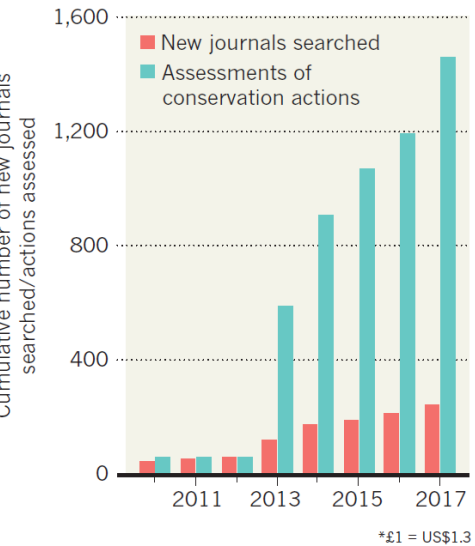


Table 1 | Emerging methods for rigorous and efficient research synthesis

Stage	Problem	Description	Solution
Planning	Planning workflow	Large numbers of software tools are available, but their relative strengths and weaknesses are unclear	Online databases of relevant tools ¹⁵
	Data collection	Sources of 'grey literature' such as organizational websites often lack convenient download functions	Web scraping ²⁷
Searching	Search record extraction	Downloading information from academic databases is slow and labour-intensive	No user-based solution: provider-dependent
	Incomplete search results	Downloading information from academic databases is slow and labour-intensive	Semantic analysis of key texts to locate additional search terms (synonyms)
	Duplicates	Same content repeated many times in the dataset because of multiple databases searched	Duplicate detection algorithms ²⁸
	Classification	Need for overview of broad trends to ensure only relevant topics are included	Simple machine-learning approaches such as topic modelling ¹¹
	Inclusion of irrelevant material	Non-target subjects included in search results	Dynamic classification using machine learning ²¹
Screening	Locating full text articles	Download of full-text documents often requires manual searching and downloading	Built in to some software platforms ²⁹ . Limited by copyright and access issues
	Data extraction	Information located in a combination of text, tables and figures, requiring manual checking	Automated image and natural language processing ^{30,31}
	Meta-analysis	Appropriate statistical models, methods and workflows can be complex, particularly for new users	Many tools available ^{29,32}
	Data visualization	Presenting complex data for broad audiences is difficult	Open source/access to data. Interactive diagrams, such as evidence atlases, heat maps and visualizations ⁸

La nécessité d'une évaluation critique

- Toutes les études ne sont pas de valeur égales
- Certaines recherches ont plus de validité que d'autres
- Validité interne (qualité) et validité externe (généralisabilité, i.e. peut se répéter fidèlement)
- Toute synthèse rigoureuse des preuves doit évaluer la validité des études incluses ET tenir compte de la variabilité de la validité dans la synthèse
 - par exemple. se concentrer davantage sur des études de validité plus élevée
 - Inclure uniquement les études à haute validité dans la synthèse détaillée (par exemple, méta-analyse)
 - Inclure l'évaluation de la validité en tant que modérateur dans la synthèse

Surmonter les défis de la synthèse des preuves

Conservation Evidence

Providing evidence to improve practice



Browse Evidence

The journal, *Conservation Evidence*

Our online journal publishes research, monitoring results and case studies on the effects of conservation interventions. All papers include some monitoring of the effects of the intervention and are written by, or in partnership with, those who did the conservation work. It includes interventions such as habitat creation, habitat restoration, translocations, reintroductions, invasive species control, and education or integrated conservation development programmes, from anywhere around the world.

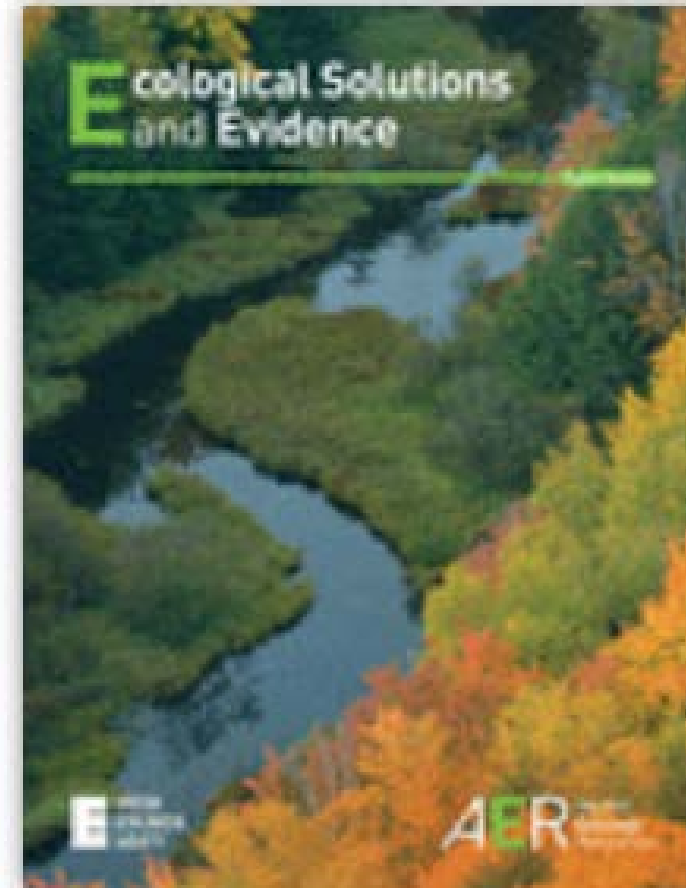
Watch a brief video on our journal [here](#).

A *volume* is created each year with peer-reviewed papers published throughout the year. We now accept Short Communications as well as standard papers.

Special issues contain new papers on a specific topic.

Virtual collections collate papers published in the journal on specific topics such as management of particular groups of species.

To search for papers on a specific topic within the journal select [Advanced search](#), enter your keyword(s) and within the Source box type: "conservation evidence". This will take you to a list of actions that contain *Conservation Evidence* papers. In order to see the list of individual *Conservation Evidence* papers on the topic, please click on 'You can also search Individual Studies' at the top of this page.



Résumé

Les connaissances scientifiques pour la conservation se sont rapidement accumulées à travers le monde, mais l'interface recherche-application doit être renforcée

La conservation fondée sur des preuves vise à lutter contre ce problème en:

- Synthèse des preuves et évaluation critique (revues systématiques, synopsis)
- Présenter les preuves d'une manière facilement compréhensible et accessible (synopsis et outils d'aide à la décision)
- La prise de décision fondée sur des preuves permet d'éviter les biais, d'accroître la transparence et d'accroître l'efficacité.

Références

- Sutherland, W. W. J., Pullin, A. A. S., Dolman, P. P. M., & Knight, T. M. (2004). The need for evidence-based conservation. *Trends in Ecology & Evolution*, 19, 305–308. <https://doi.org/10.1016/j.tree.2004.03.018>
- Cook, C. N., Mascia, M. B., Schwartz, M. W., Possingham, H. P., & Fuller, R. A. (2013). Achieving conservation science that bridges the knowledge-action boundary. *Conservation Biology*, 27, 669–678. <https://doi.org/10.1111/cobi.12050>
- Dicks, L. V., Walsh, J. C., & Sutherland, W. J. (2014). Organising evidence for environmental management decisions: a “4S” hierarchy. *Trends in Ecology & Evolution*, 29, 607–613. <https://doi.org/10.1016/j.tree.2014.09.004>
- Salafsky, N., Boshoven, J., Burivalova, Z., Dubois, N. S., Gomez, A., Johnson, A., ... Wordley, C. F. R. (2019). Defining and using evidence in conservation practice. *Conservation Science and Practice*, 1, e27. doi: 10.1111/csp2.27
- Sutherland et al. (2020). *Conservation Research, Policy and Practice*. Cambridge University Press. <https://doi.org/10.1017/9781108638210> Open Access book.
- Walsh, J. C., Dicks, L. V., Raymond, C. M., Sutherland, W. J. (2019) A typology of barriers and enablers of scientific evidence use in conservation practice. *Journal of Environmental Management*, 250, 109481. <https://doi.org/10.1016/j.jenvman.2019.109481>

Ressources

- Conservation Evidence www.conservationevidence.com
- Collaboration of Environmental Evidence www.environmentalevidence.org/
- Campbell Collaboration <https://campbellcollaboration.org/>
- Biodiversity Knowledge Network www.vliz.be/projects/biodiversityknowledge/
- Guide to influencing decision-making – Science to Action
 - <http://seaknowledgebank.net/e-library/science-action-guidebook-scientists-guide-influencing-decision-making-decision-makers>