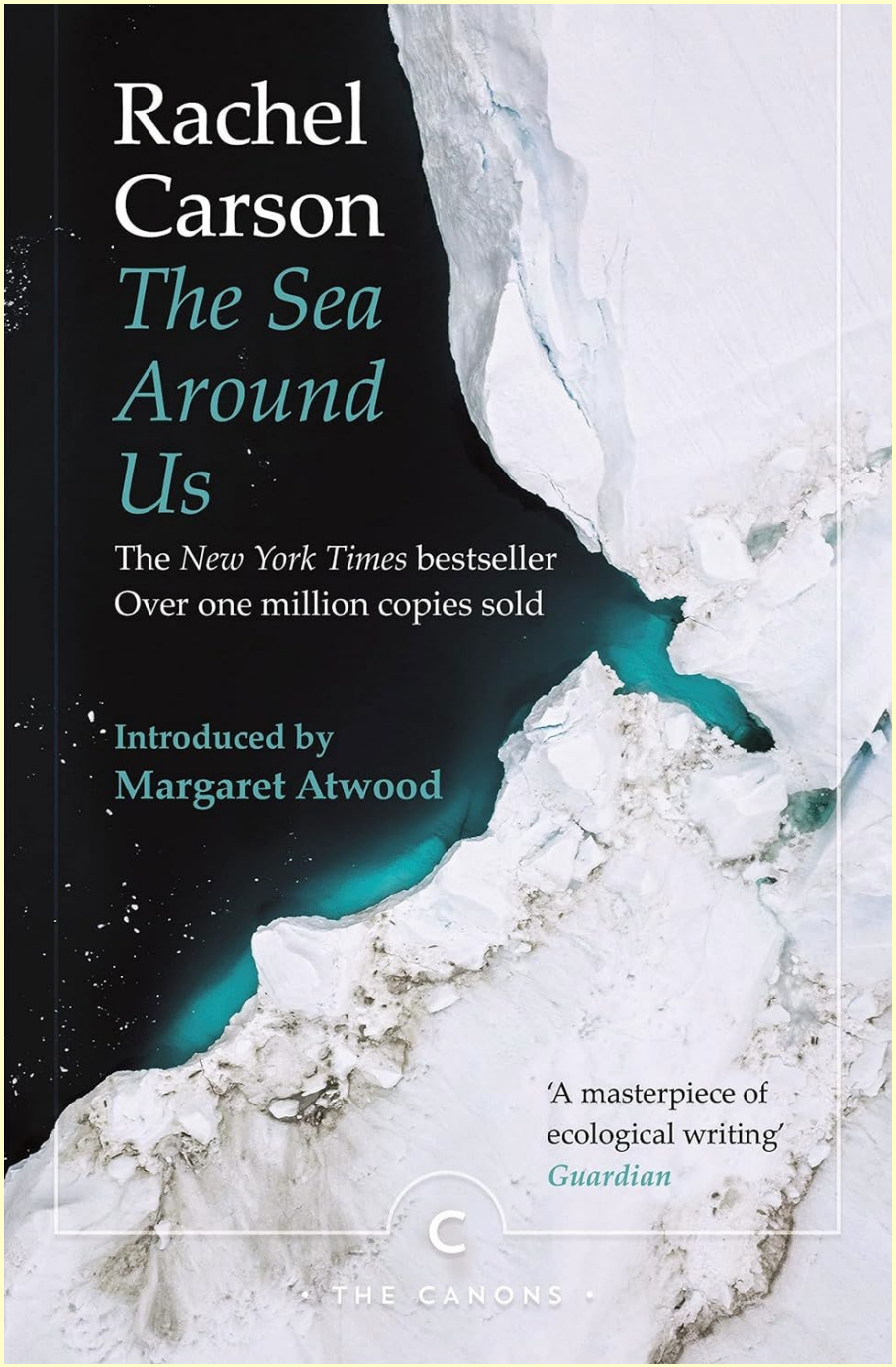
Converting science into policy: a career inspired by Rachel Carson

William Sutherland
University of Cambridge


Rachel Carson
The Sea Around Us
The New York Times bestseller
Over one million copies sold
Introduced by
Margaret Atwood
'A masterpiece of ecological writing'
Guardian
THE CANONS

Kelp

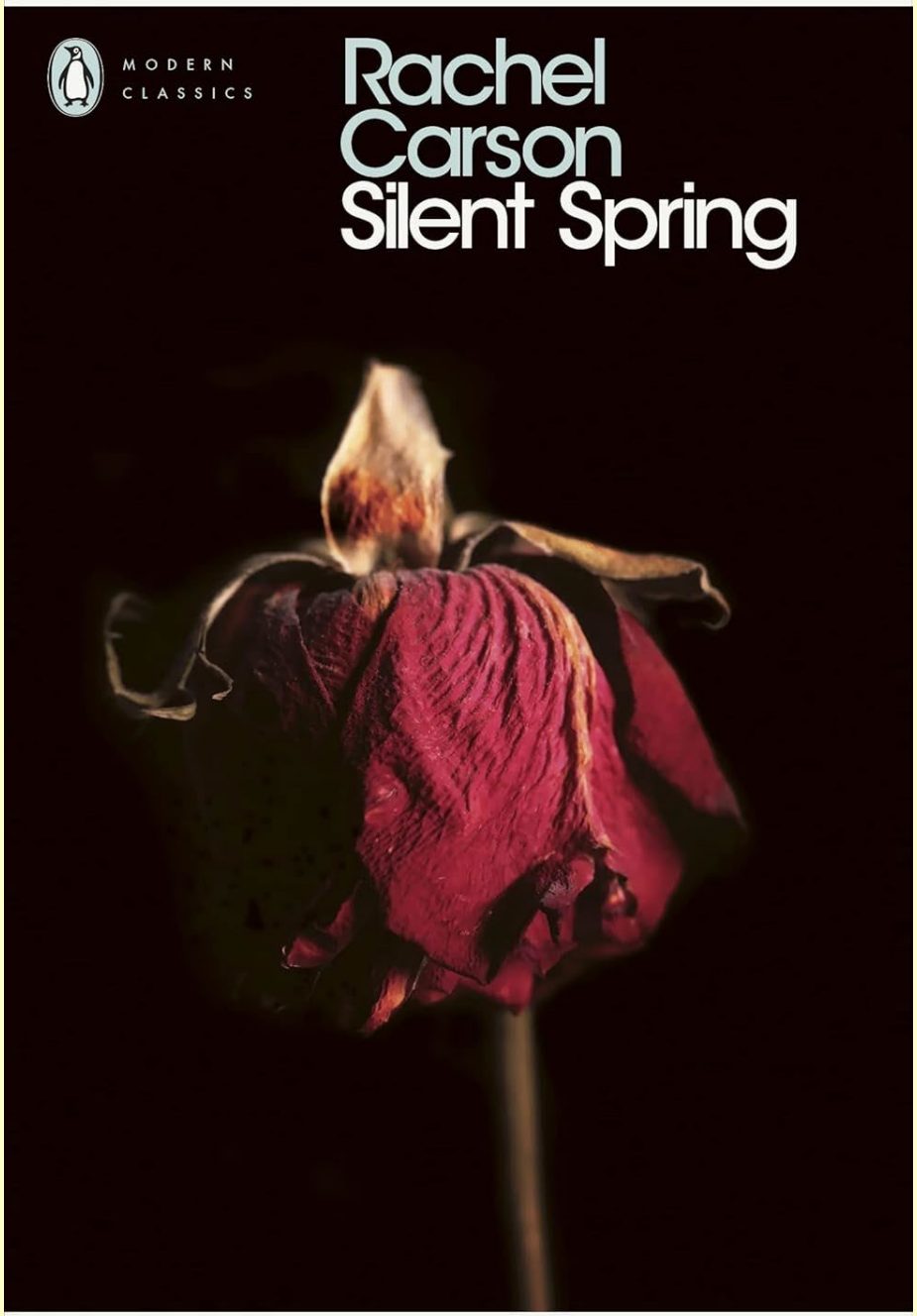
211 views • 1 month ago

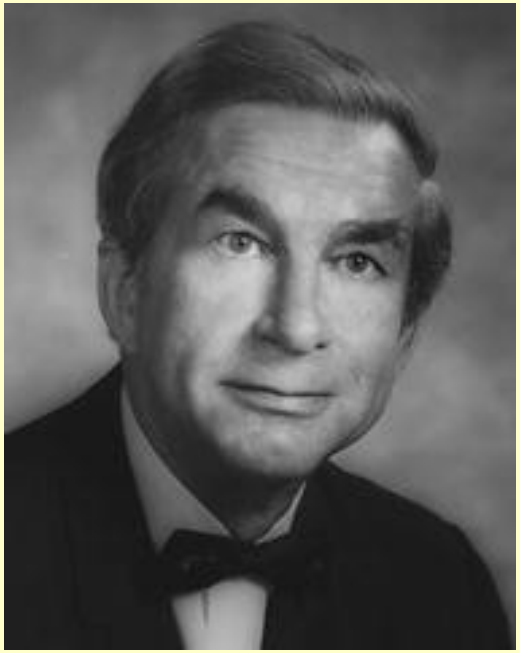
The physics and ecology of tides

142 views • 5 days ago

Chalk Streams

253 views • 3 weeks ago


MODERN
CLASSICS
Rachel
Carson
Silent Spring



Alphonse Chapanis

WHO Surgical Safety Checklist
(adapted for England and Wales)

NHS
National Patinet Safety Agency
National Reporting and Learning Service

SIGN IN (To be read out loud)

Before induction of anaesthesia

Has the patient confirmed his/her identity, site, procedure and consent?
- ☐ Yes

Is the surgical site marked?
- ☐ Yes/not applicable

Is the anaesthesia machine and medication check complete?
- ☐ Yes

Does the patient have a:

Known allergy?
- ☐ No
- ☐ Yes

Difficult airway/aspiration risk?
- ☐ No
- ☐ Yes, and equipment/assistance available

Risk of >500 ml blood loss (7 ml/kg in children)?
- ☐ No
- ☐ Yes, and adequate IV access/fluids planned

TIME OUT (To be read out loud)

Before start of surgical intervention
for example, skin incision

Have all team members introduced themselves by name and role?
- ☐ Yes

Surgeon, Anaesthetist and Registered Practitioner verbally confirm:
- ☐ What is the patient's name?
- ☐ What proceuder, site and position are planned?

Anticipated critical events

Surgeon:
- ☐ How much blood loos is anticipated?
- ☐ Are there any specific equipment requirements or special investigations?
- ☐ Are there any critical or unexpected steps you want the team to know about?

Anaesthetist:
- ☐ Are there any patient specific concerns?
- ☐ What is the patient's ASA grade?
- ☐ What monitoring equipment and other specific levels of support are required, for example blood?

Nurse/ODP:
- ☐ Has the sterility of the instrumentation been confirmed (including indicator results)?
- ☐ Are there any equipment issues or concerns?

Has the surgical site infection (SSI) bundle been undertaken?
- ☐ Yes/not applicable
  - Antibiotic prophylaxis within the last 60 minutes
  - Patient warming
  - Hair removal
  - Glycaemic control

Has VTE prophylaxis been undertaken?
- ☐ Yes/not applicable

Is essential imaging displayed?
- ☐ Yes/not applicable

SIGN OUT (To be read out loud)

Before any member of the team leaves the operating room

Registered Practitioner verbally confirms with the team:
- ☐ Has the name of the procedure been recorded?
- ☐ Has it been confirmed that instruments, swabs and sharps counts are complete (or not applicable)?
- ☐ Have the specimens been labelled (including patient name)?
- ☐ Have any equipment problems been identified that Need to be addressed?

Surgeon, Anaesthetist and Registered Practitioner:
- ☐ What are the key concerns for recovery and management of this patient?

PATIENT DETAILS

Last name:

First name:

Date of birth:

NHS Number:*

Procedure:

*If the NHS Number is not immediately available, a temporary number should be used until it is.

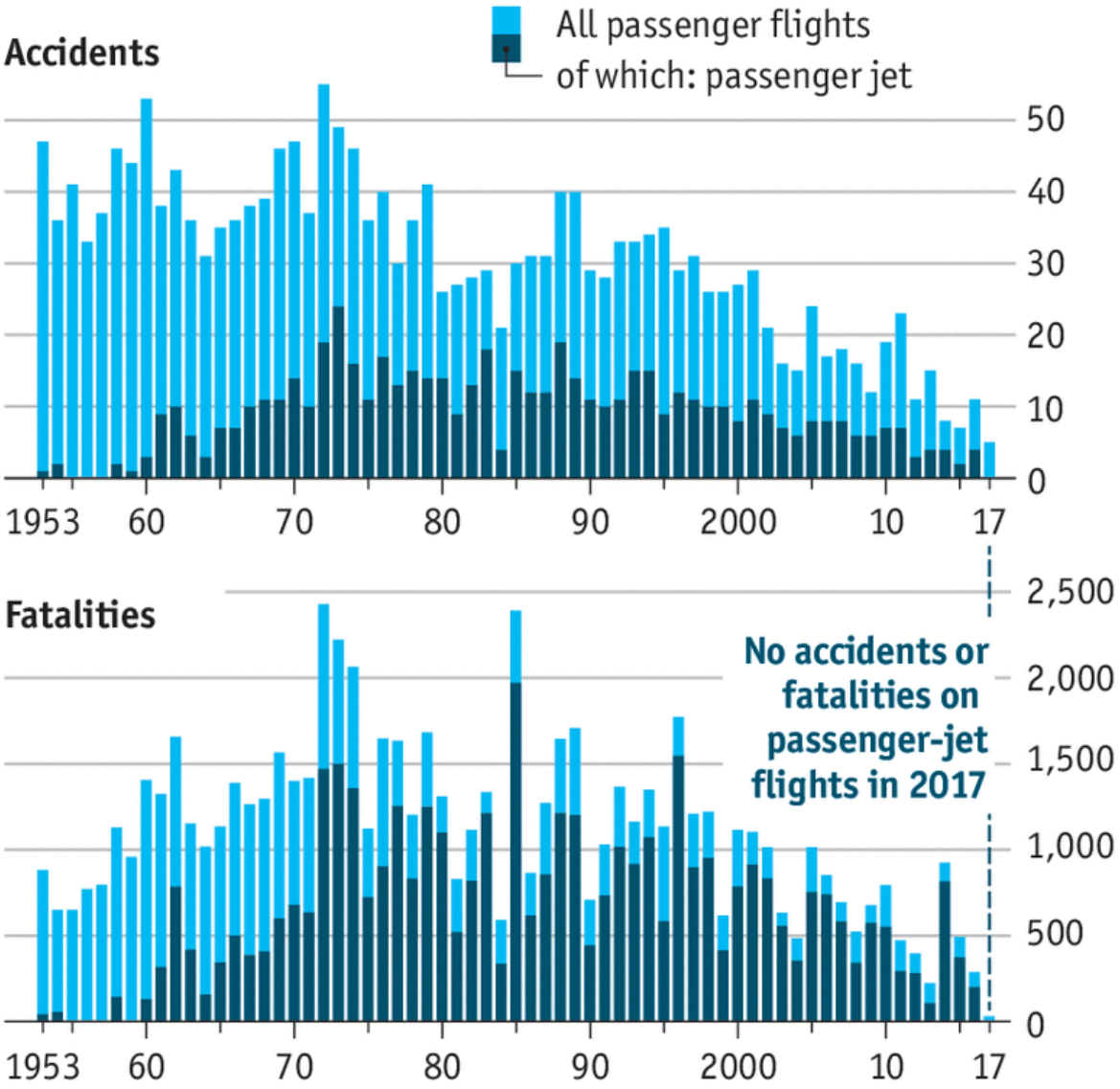
This checklist contains the core content for England and Wales

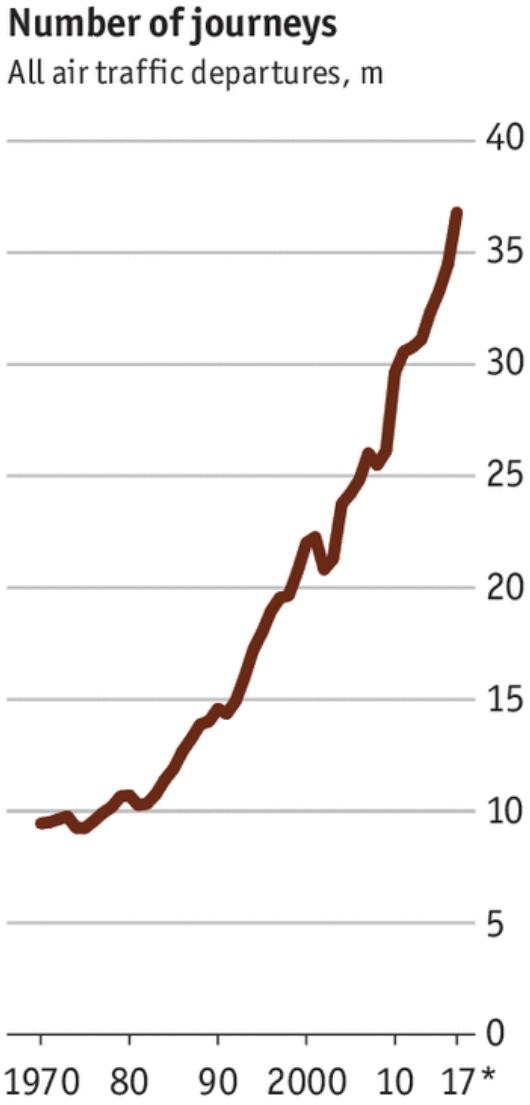
www.npsa.nhs.uk/nrls

0861 January 2009

Safer skies

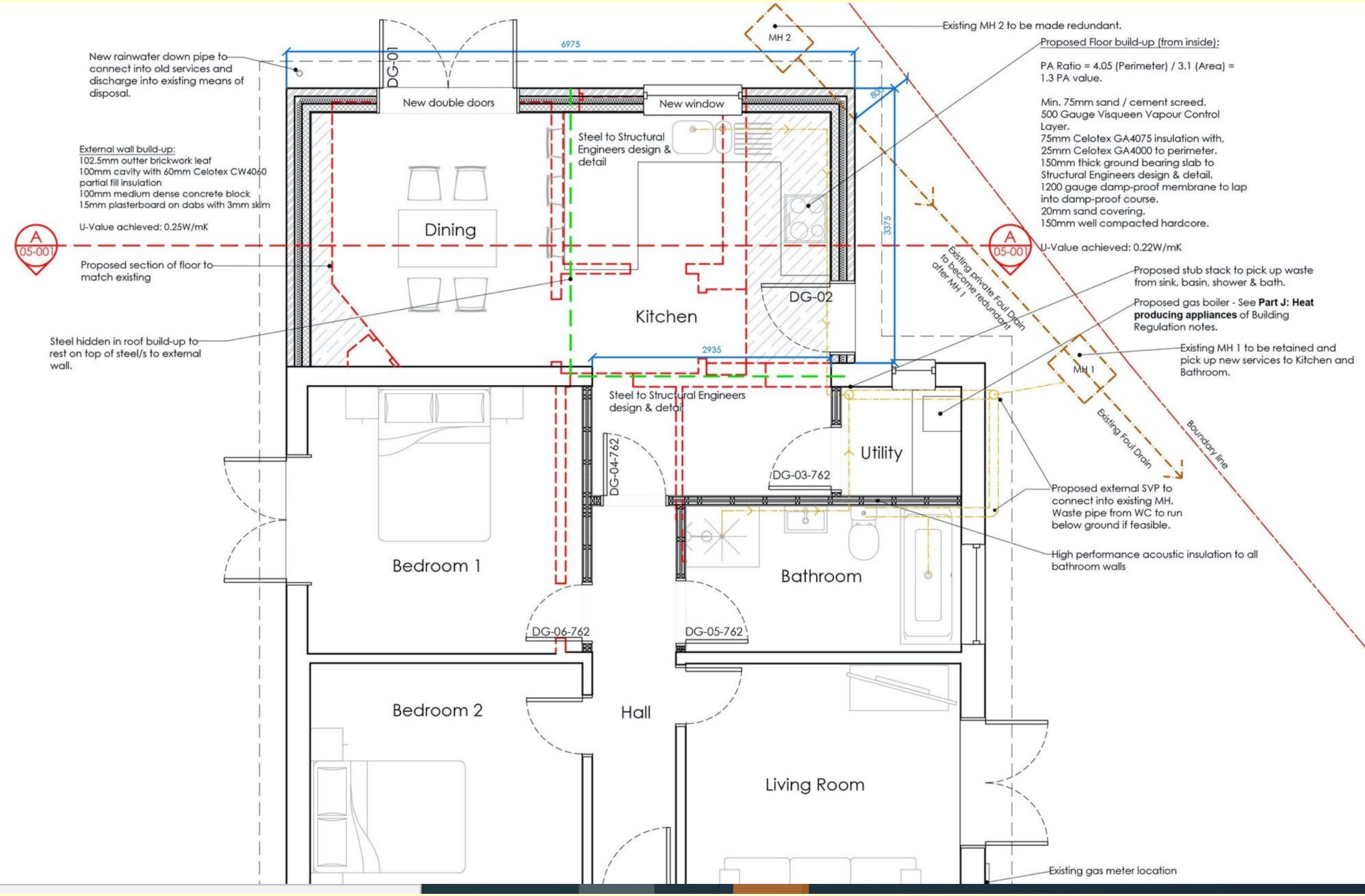
Global passenger flights, number of accidents and fatalities





Source: Aviation Safety Network

*Estimate


New rainwater down pipe to connect into old services and discharge into existing means of disposal.
External wall build-up:
102.5mm outter brickwork leaf
100mm cavity with 60mm Celotex CW4060 partial fill insulation
100mm medium dense concrete block
15mm plasterboard on dabs with 3mm skim
U-Value achieved: 0.25W/mK
A 05-001
Proposed section of floor to match existing
Steel hidden in roof build-up to rest on top of steel/s to external wall.
DG-01
6975
New double doors
New window
Steel to Structural Engineers design & detail
Dining
Kitchen
DG-02
3375
2935
Steel to Structural Engineers design & detail
DG-04-762
Utility
DG-03-762
Bedroom 1
Bathroom
DG-06-762
DG-05-762
Bedroom 2
Hall
Living Room
MH 2
Existing MH 2 to be made redundant.
Proposed Floor build-up (from inside):
PA Ratio = 4.05 (Perimeter) / 3.1 (Area) = 1.3 PA value.
Min. 75mm sand / cement screed.
500 Gauge Visqueen Vapour Control Layer.
75mm Celotex GA4075 insulation with,
25mm Celotex GA4000 to perimeter.
150mm thick ground bearing slab to Structural Engineers design & detail.
1200 gauge damp-proof membrane to lap into damp-proof course.
20mm sand covering.
150mm well compacted hardcore.
U-Value achieved: 0.22W/mK
Existing private Foul Drain to become redundant after MH 1
Proposed stub stack to pick up waste from sink, basin, shower & bath.
Proposed gas boiler - See Part J: Heat producing appliances of Building Regulation notes.
Existing MH 1 to be retained and pick up new services to Kitchen and Bathroom.
MH 1
Existing Foul Drain
Boundary line
Proposed external SVP to connect into existing MH. Waste pipe from WC to run below ground if feasible.
High performance acoustic insulation to all bathroom walls
Existing gas meter location

James Lind

1747 surgeon, *H.M.S. Salisbury*

1 quart cider	Worse
2 teaspoons of vinegar, 3 times daily in gruel	Worse
25 drops elixir of vitriol, 3 times daily	Worse
Half pint seawater	Worse
2 oranges and 1 lemon	Recovered
Nutmeg, garlic, mustard seed, horseradish, barley water, cream of tartar, balsam of Peru & gum myrtle mixed. 3x daily.	Worse

James Lind

A

TREATISE

ON THE

SCURVY.

IN THREE PARTS.

CONTAINING

An Inquiry into the Nature, Cauſes, and Cure, of that Diſeaſe.

Together with

A Critical and Chronological View of what has been publiſhed on the Subject.

By JAMES LIND, M. D.

Fellow of the Royal College of Phyſicians in Edinburgh.

The SECOND EDITION corrected, with Additions and Improvements.

LONDON:

Printed for A. MILLAR in the Strand,

MDCCLVII.

Summary of dates

1593 Sir Richard Hawkins prescribes oranges and lemons to treat scurvy at sea

1601 James Lancaster. Sailors with citrus free of scurvy

1747 James Lind. Randomised replicated experiment.

1753 Lind publishes Treatise on scurvy.

1795 British Navy orders citric fruits taken by navy

1865 Suitable diets introduced merchant navy

1600-1800 over 1 million lost in British navy due to scurvy.

Managing COVID 19: treatments (May 2022 v24.0)

	No oxygen support (early COVID-19, but at high risk of progression)	Low-flow oxygen (COVID-19 pneumonia)	High-flow oxygen/CPAP/ mechanical ventilation (COVID-19 pneumonia)
Recommended Benefits outweigh harms for almost everyone. All or nearly all informed people would likely want this option.	**Neutralising monoclonal antibodies** (See policy for more details) ◆ Aged 12 or over, and weight 40 kg or over, and ◆ who are not in hospital	**Corticosteroids (dexamethasone, or either hydrocortisone or prednisolone)**	
		Tocilizumab (See policy for more details) If C-reactive protein is 75 mg/litre or more	**Tocilizumab** (See policy for more details) If within 48 hours of starting this level of support
		Baricitinib Adults	
		Low molecular weight heparin (standard prophylactic dose) Adults or young people, if within 14 hours of admission and no increased bleeding risk	
Conditional for Benefits outweigh harms for the majority, but not for all. The majority of informed people would likely want this option.	**Nirmatrelvir and ritonavir** (See policy for more details) ◆ Aged 18 or over, and ◆ within 5 days of symptom onset	**Sarilumab** (See policy for more details) ◆ If tocilizumab unavailable or cannot be used, and ◆ C-reactive protein level is 75 mg/litre or more	**Sarilumab** (See policy for more details) ◆ If tocilizumab unavailable or cannot be used, and ◆ within 48 hours of starting this level of support (see policy)
	Remdesivir (See policy for more details) ◆ Aged 12 or over, and weight 40 kg or over, and ◆ within 7 days of symptom onset	**Baricitinib** Children and young people aged 2 to 18	
	Molnupiravir (See policy for more details) ◆ Aged 18 or over, and ◆ within 5 days of symptom onset	**Remdesivir** Aged 12 or over and weight 40 kg or over	
		Low molecular weight heparin (treatment dose) Adults or young people, if no increased bleeding risk	
		Casirivimab and imdevimab ◆ If no detectable SARS-CoV-2 antibodies (seronegative), and aged 12 or over, and ◆ infection known to be caused by variant susceptible to casirivimab and imdevimab	

NICE National Institute for Health and Care Excellence

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NEWS | ASIA

Massive Mangrove Restoration Backfires

Philippine conservation effort dooms ecologically critical trees

15 JUL 2008

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Nature 2030 Our Work Our Union Resources

Home / News & Events / Mass mangrove restoration: Driven by good intentions but offering limited r...

Story | 21 Feb, 2017

Mass mangrove restoration: Driven by good intentions but offering limited results

There is an urgent need to address the global degradation of coastal ecosystems, but are mass mangrove planting initiatives sustainable?

Many mangrove restorations fail. Is there a better way?

These carbon-hoarding, coastline-protecting forests are sponges for greenhouse gases. Doing plantings right and involving local communities are key to saving them.

Action	Percentage change in effectiveness	Reference
Applying evidence-based medicine	19% reduction in deaths; 29% reduction in hospital stays	Emparanza et al. (2015)
Marine protected areas	29% not positively influencing fish populations	Gill et al. (2017)
Common Agricultural Policy agri-environment measures	6% studies showed decreases, 17% mixed results, 23% no change, 54% increases. No increase in the effectiveness over time	Kleijn and Sutherland (2003) Batáry et al. (2015)
Effectiveness of ten measures for protecting raptors	Just carrying out effective measures could achieve the same outcomes for 22% less expenditure	Santangeli and Sutherland (2017)
Effectiveness of orangutan measures	Some actions (habitat protection; patrolling activities) 300-400% more cost effective than others (habitat restoration, rescue and rehabilitation, translocation)	Santika et al. (2022)
Conservation Evidence Journal papers	Of those applied interventions that were tested 31% could be considered as unsuccessful	Spooner et al. (2015)
Effectiveness of protected areas for waterbirds	27% of all populations positively impacted by protected areas; 21% negatively impacted; 48% no detectable impact	Wauchope et al. (2022)

It is actually less good than that…

- It is rare to start by considering the full range of possible options
- Judgements usually made in ways that extensive research shows are likely to produce the wrong answer
- Decision making rarely follows processes known to be effective
- Costs rarely presented in the manner that makes them comparable and so any use
- Other sources of knowledge are typically used haphazardly
- There is little learning from failures
- There is rarely any effective learning.

Guidance on growing mistletoe

- Harvest berries from a tree in March or April. Make sure you choose a tree that is similar to the type of tree in your own garden that you wish to establish the mistletoe on.
- Discard any crushed berries and do not use berries from sprigs used as Christmas decorations. These will not germinate as they are generally harvested when immature.
- Choose a branch 10cm (4in) or more in girth on a tree that is 15-years-old or more. Ideally this should be fairly high up, so the developing plant receives plenty of light.
- Find a natural crevice in the bark or make a shallow cut to create a small flap.
- Remove the seeds from the fleshy berries and insert them into the crevice or under the flap.
- Finish by covering with hessian to protect the seeds from birds.

Search

Select Language

Conservation Evidence

Providing evidence to improve practice

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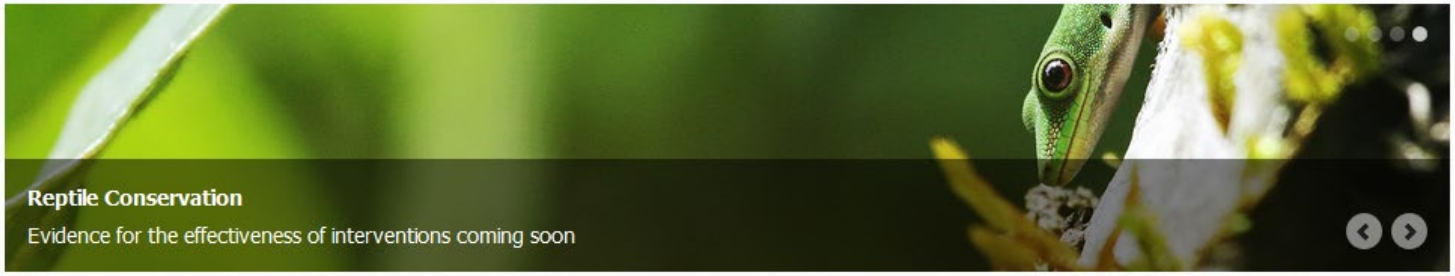


Browse by category:

- Amphibian Conservation — 129 Actions
- Bat Conservation — 78 Actions
- Bee Conservation — 59 Actions
- Bird Conservation — 455 Actions
- Control of Freshwater Invasive Species — 161 Actions
- Farmland Conservation — 119 Actions
- Forest Conservation — 122 Actions
- Management of Captive Animals — 29 Actions
- Mediterranean Farmland — 75 Actions

See more

Our mission

Conservation Evidence is a free, authoritative information resource designed to support decisions about how to maintain and restore global biodiversity.

We summarise evidence from the scientific literature about the effects of conservation interventions, such as methods of habitat or species management.

The journal, *Conservation Evidence*

A unique, free to publish open-access journal publishing research and case studies that measure the effects of conservation actions.

Read latest volume:

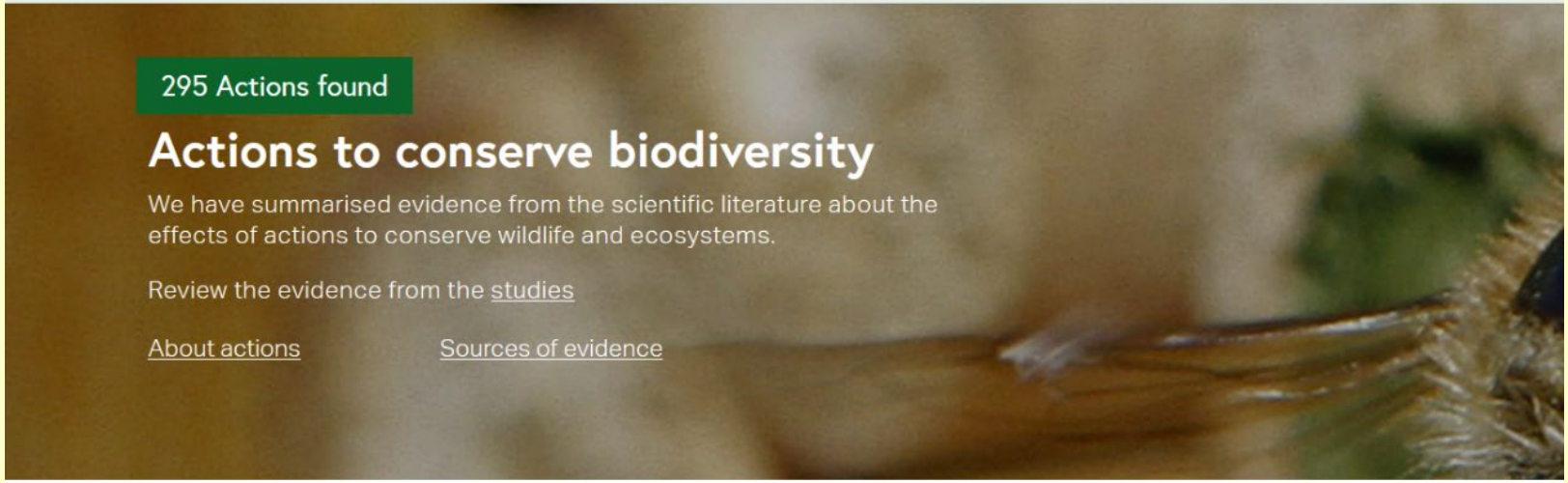
Volume 14

Conservation Evidence on Twitter

ConservationEvidence Retweeted

Nigel Taylor
@ngltaylor

How should you deal with invasive Parrot's feather in waterways?
Evidence for 10 options now on Conservation Evidence. A nice little update to the database.
bit.ly/2EXbrl5



295 Actions found

Actions to conserve biodiversity

We have summarised evidence from the scientific literature about the effects of actions to conserve wildlife and ecosystems.

Review the evidence from the studies

About actions Sources of evidence

Refine

Category +

Keywords +

Habitat +

Threat +

Action type +

Country +

Refresh results

295 Actions found

Order results by: Number of studies ▼ Relevance Title

	Action	Effectiveness	Studies	Category
☐	Cease or prohibit all types of fishing in a marine protected area	Awaiting assessment	79	
☐	Translocate to re-establish or boost populations in native range	Beneficial	64	
☐	Directly plant trees/shrubs: brackish/saline wetlands	Beneficial	47	
☐	Use a larger mesh size	Awaiting assessment	42	
☐	Use acoustic devices on fishing gear	Trade-off between benefit and harms	33	

Restoration, creation and management of salt marshes and tidal flats

A collation of evidence-based guidance

Edited by: Vanessa Cutts[1], Paul L.A. Erftemeijer[2], Lorenzo Gaffi[3], Ward Hagemeijer[3], Rebecca K. Smith[1], Nigel G. Taylor[1] and William J. Sutherland[1]

April 2024

Conservation Evidence · Wetlands International · WCF

Section 3 Restoration approaches¶

- Guidance on facilitating tidal exchange to restore/create salt marshes and intertidal flats¶

Guidance on using sediment to restore/create salt marshes and intertidal flats¶
¶
Guidance on reprofiling salt marshes and intertidal flats¶
¶
Guidance on restoring or creating salt marsh vegetation¶
¶
Guidance on managing vegetation on intertidal flats¶
¶
Guidance on chemical control of *Spartina* spp.¶
¶
Guidance on physical control of *Spartina* spp.¶
¶
Guidance on integrated control of *Spartina* spp.¶

Guidance on facilitating tidal exchange to restore/create salt marshes and intertidal flats

Vanessa Cutts[1], Paul L.A. Erftemeijer[2], Nigel G. Taylor[1], Lorenzo Gaffi[3], Ward Hagemeijer[3] and William J. Sutherland[1]

1 Conservation Science Group, Department of Zoology, University of Cambridge, UK
2 DAMCO Consulting, Perth, Australia
3 Wetlands International, The Netherlands

Managed realignment in the Westerschelde, The Netherlands. [Credit: Edwin Paree]

Completed: 05.4.2024

Cite as: Cutts V., Erftemeijer P.L.A., Taylor N.G., Gaffi L., Hagemeijer W. & Sutherland W.J. (2024) Guidance on facilitating tidal exchange to restore/create salt marshes and mudflats. *Conservation Guidance Series No. 3, v1.0.* https://doi.org/10.52201/CGS/GQOG7004

Annual Review of Resource Economics

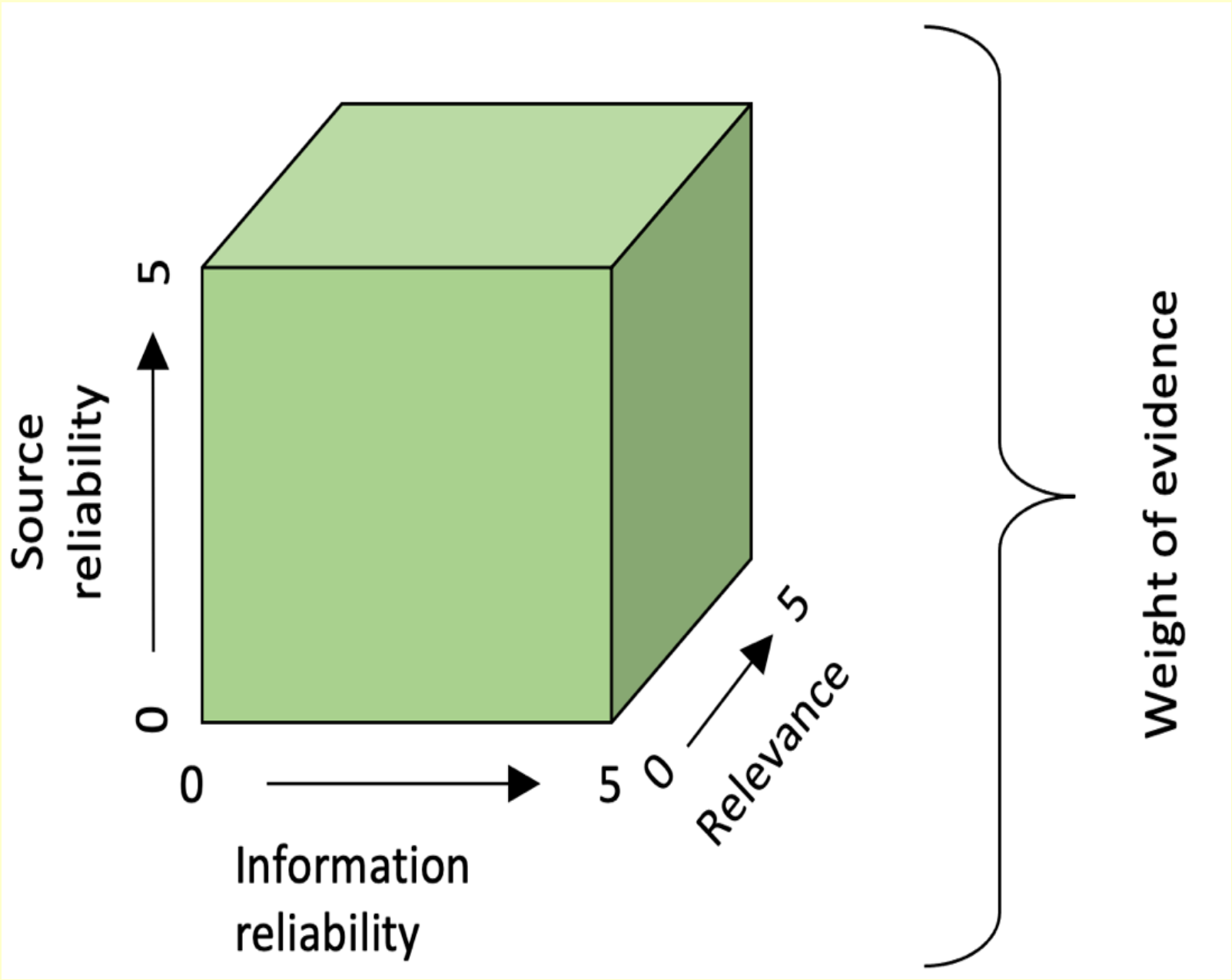
The Rigor Revolution: New Standards of Evidence for Impact Assessment of International Agricultural Research

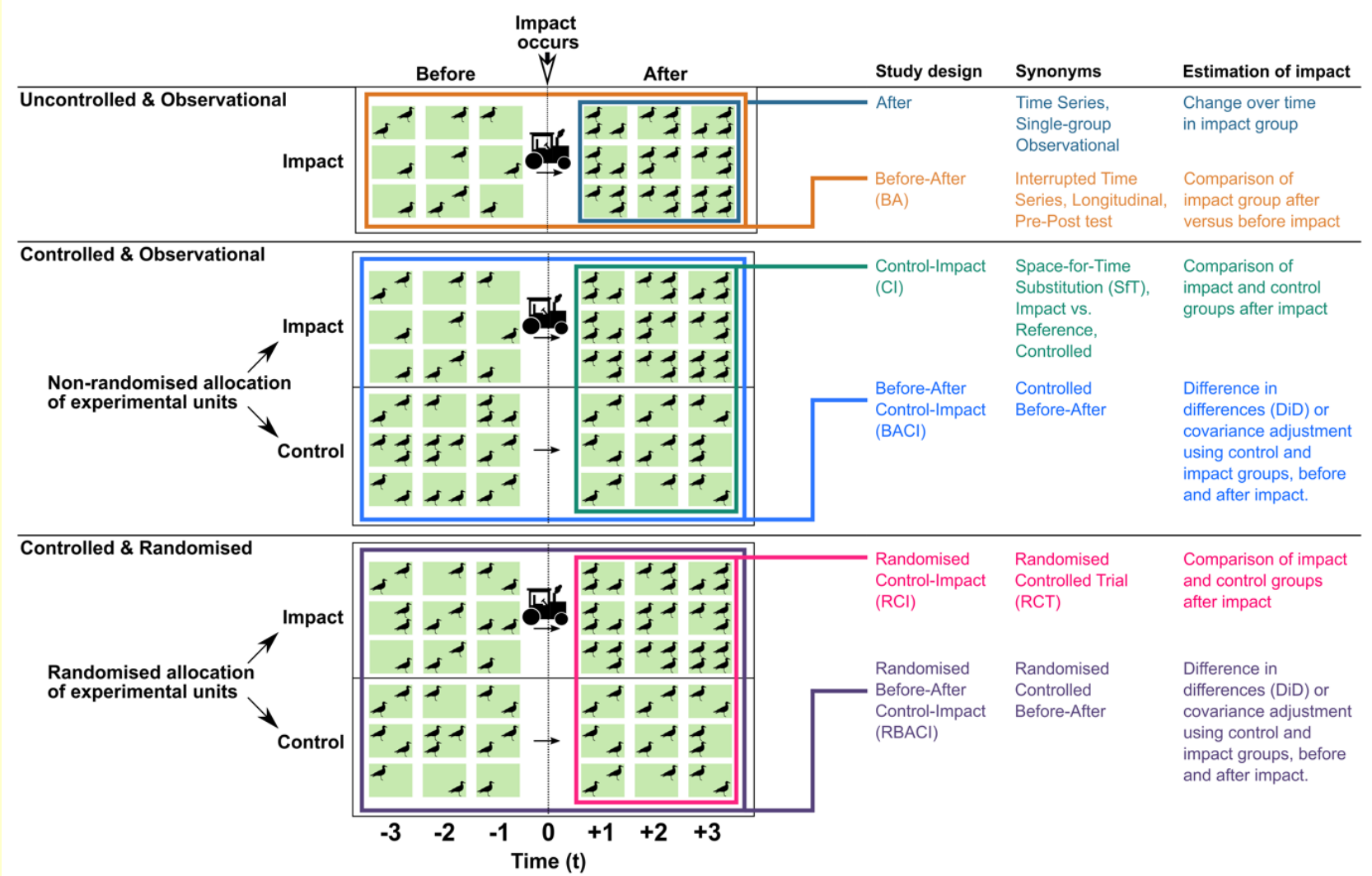
James R. Stevenson,[1,2] Karen Macours,[3,4] and Douglas Gollin[5]

[1]CGIAR Standing Panel on Impact Assessment, Alliance of Bioversity International and CIAT, Rome, Italy

[2]International Food Policy Research Institute, Washington, DC, USA

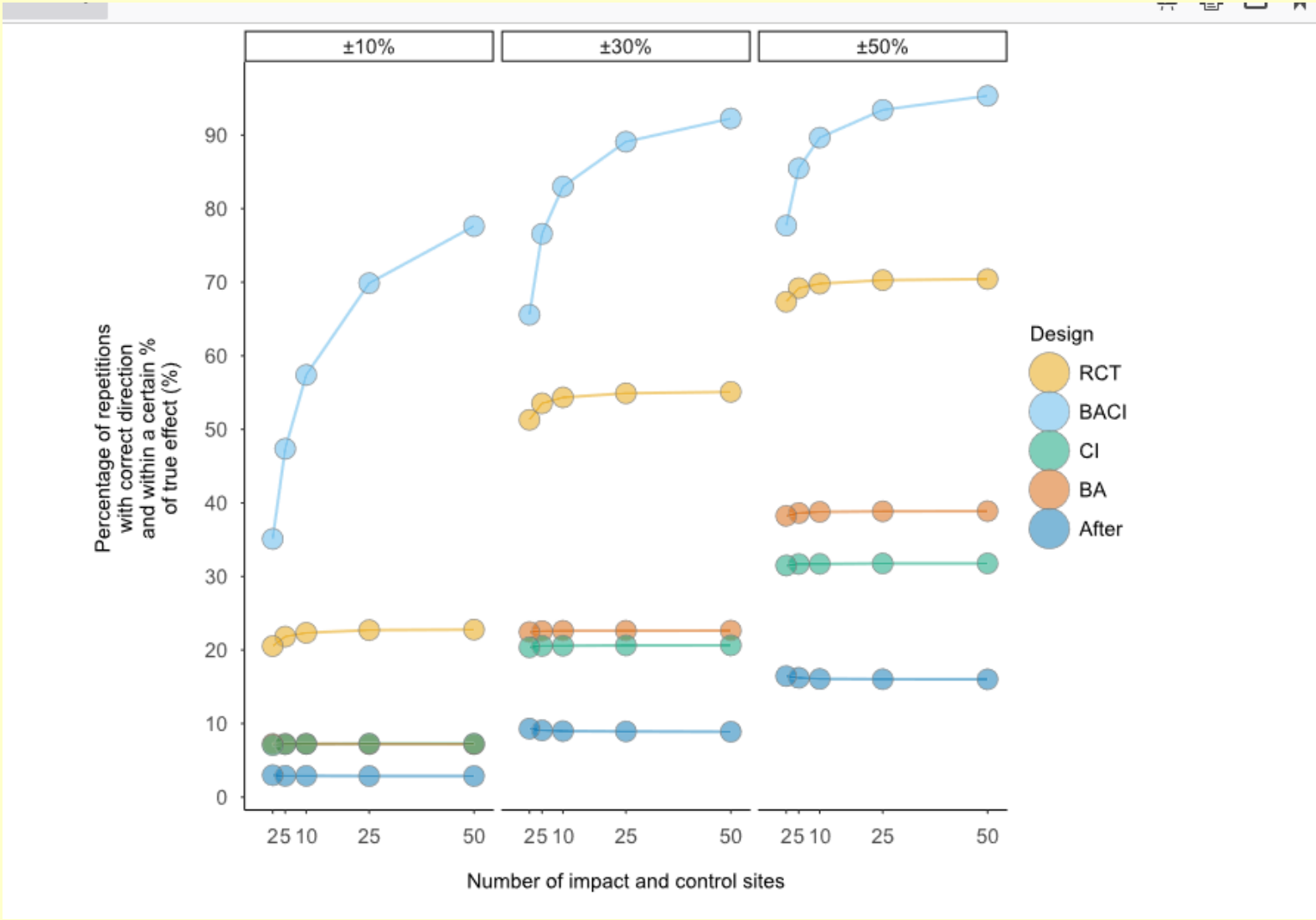
[3]Paris School of Economics, Paris, France; email: karen.macours@psemail.eu


Source reliability
5
0
0
5
Information reliability
0
5
Relevance
Weight of evidence

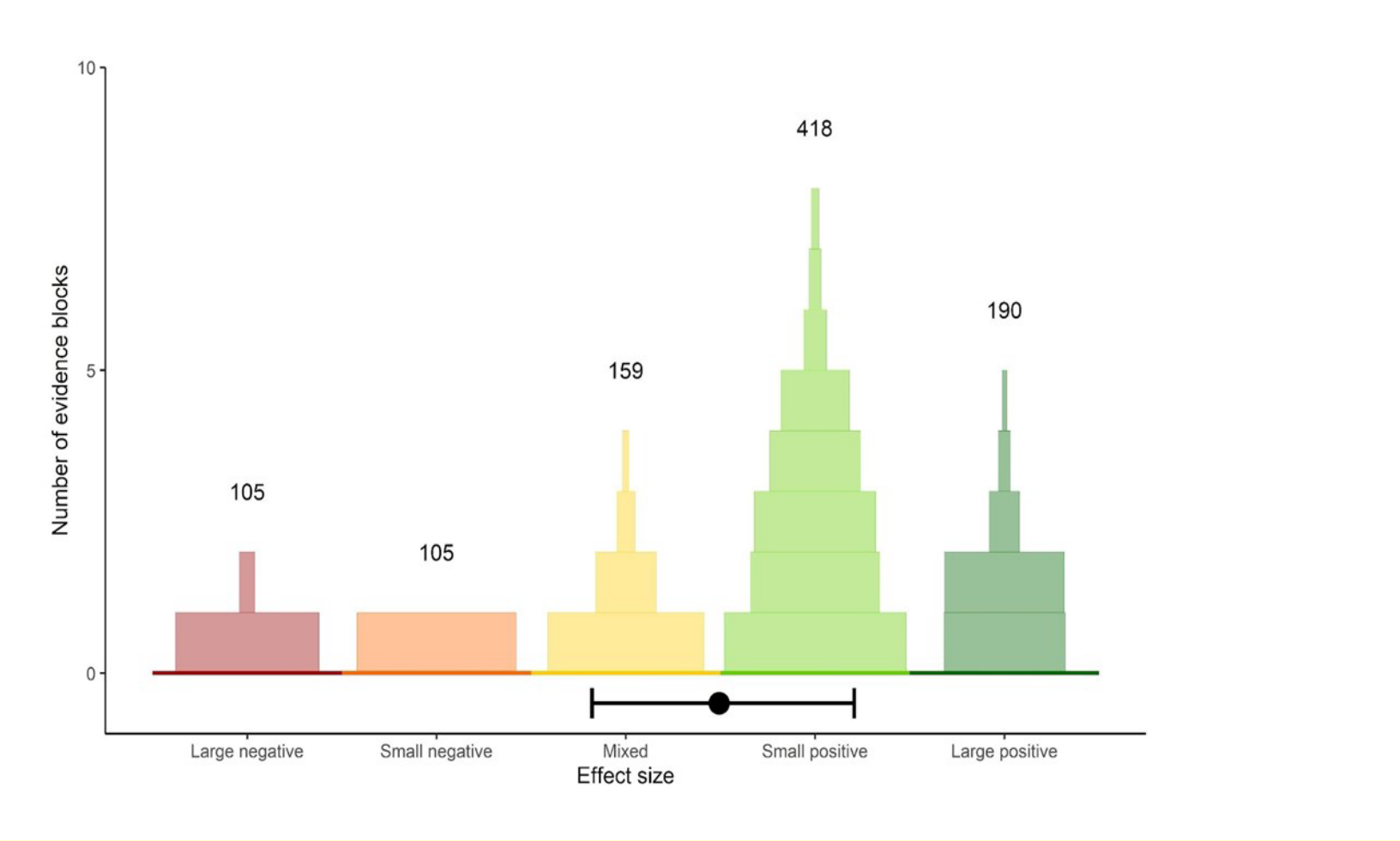


Alec Christie

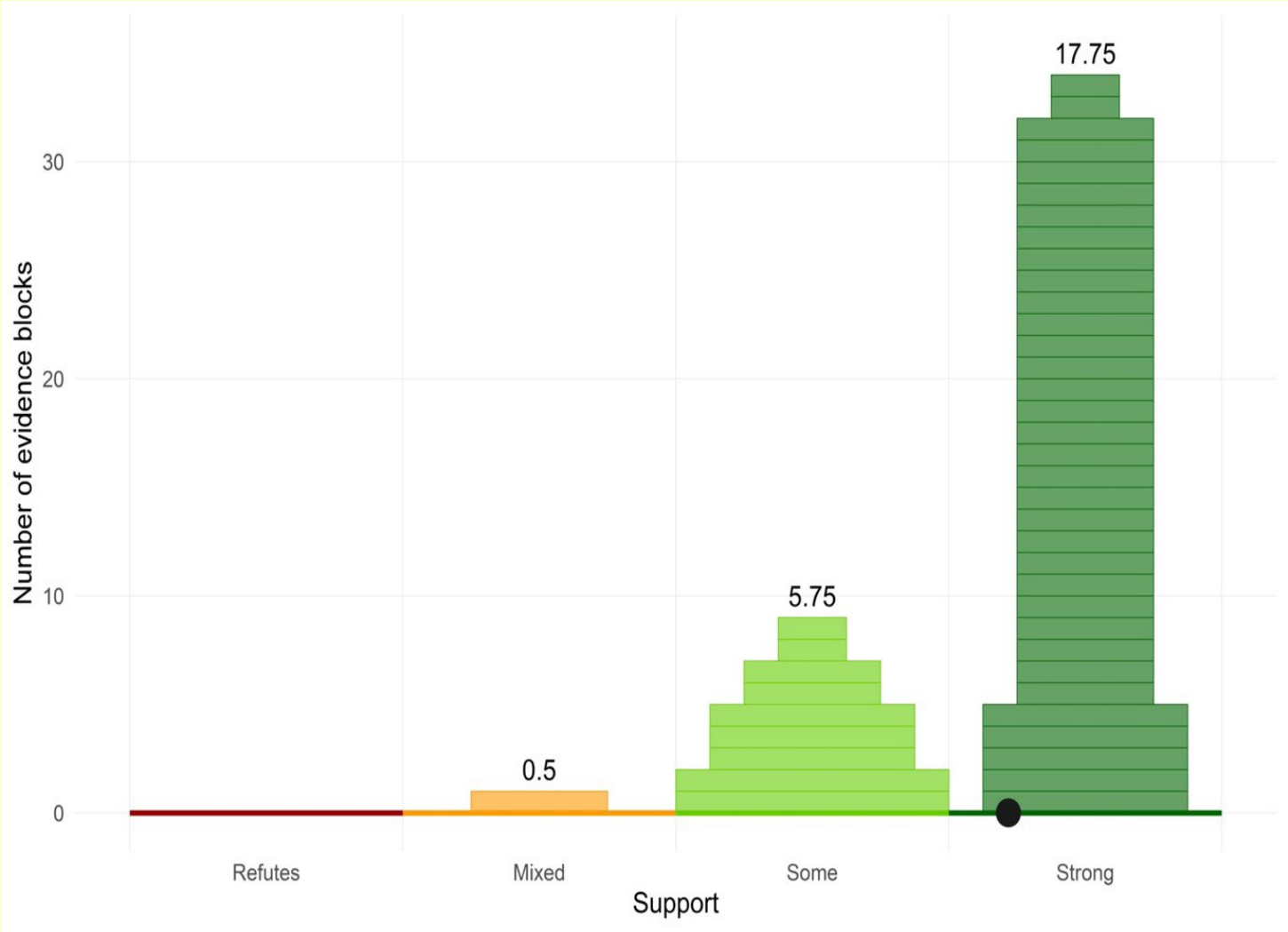
How accurate the result is - e.g. is it within 50% of the right answer (right hand column)



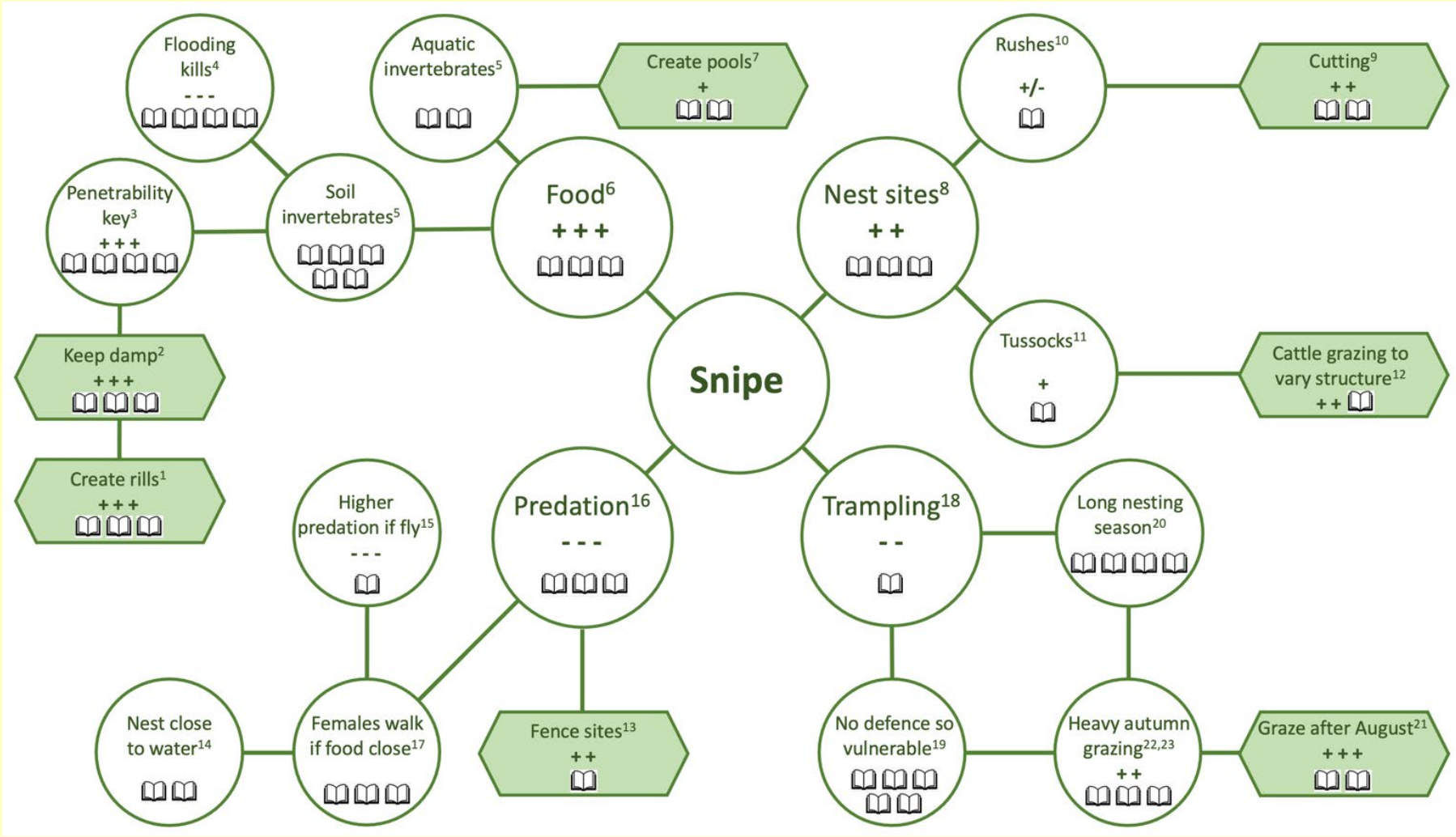
Ziggurat plats

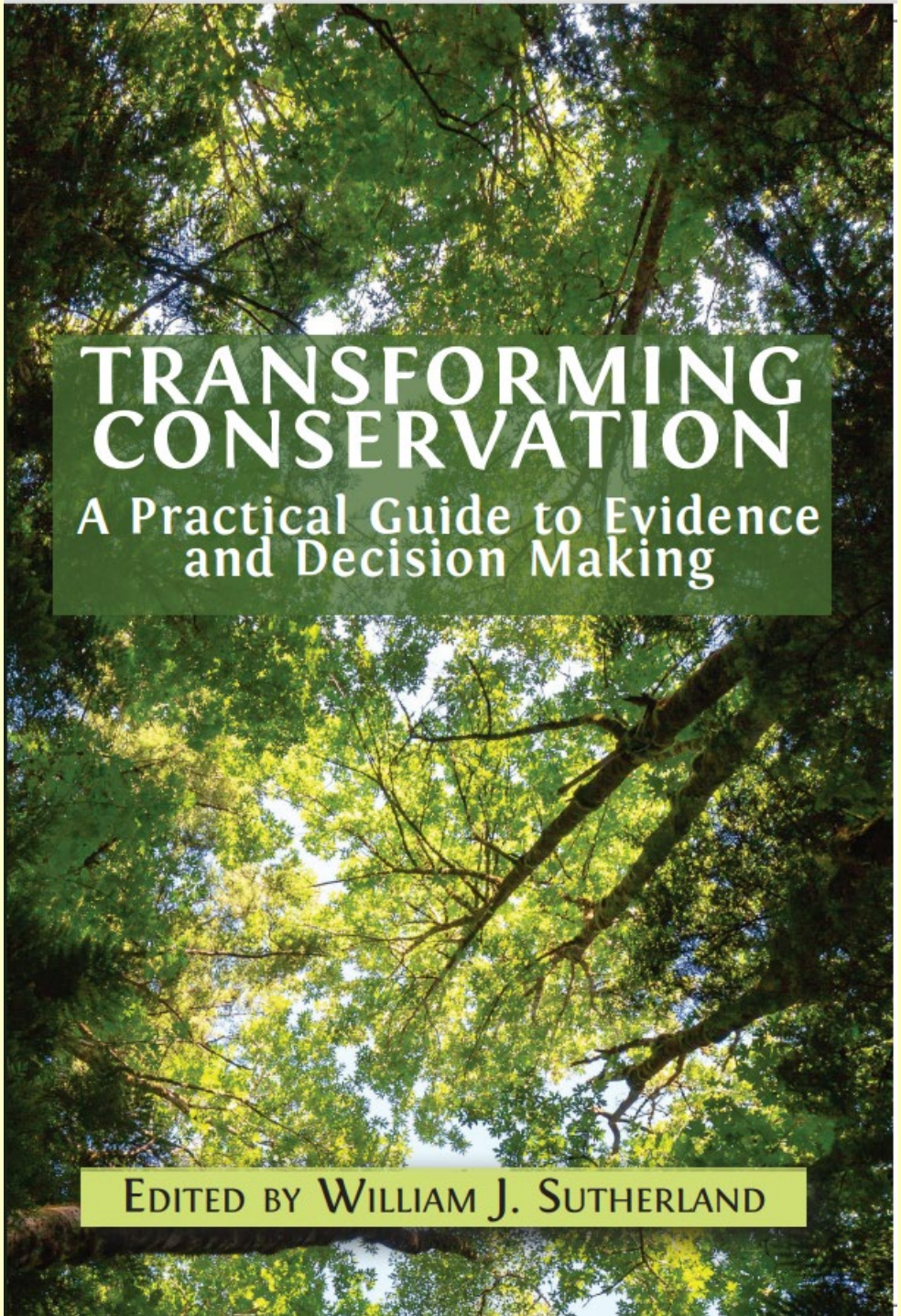


MAVA: Do organisations use flexible funding to invest in organisational development?



Mind map – snipe management




TRANSFORMING CONSERVATION
A Practical Guide to Evidence and Decision Making
EDITED BY WILLIAM J. SUTHERLAND

Sadiq Jaffer

Anil Madhavapeddy

Conservation Evidence machine learning pipeline

datasets

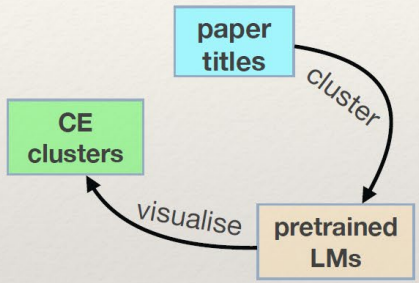
models

verified outputs

Data: Start with a few million paper titles (OpenAlex)

Model: use pre-trained language models that are open source

Output: create clusters of topics from the titles



Conservation Evidence machine learning pipeline

datasets

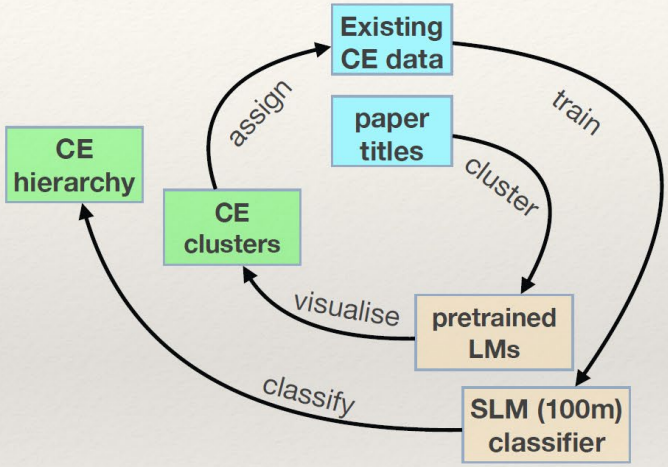
models

verified outputs

Data: Now integrate the existing CE datasets done manually to date.

Model: train a two-stage MLP (embed using a small language model, then train tiny model on those embeddings).

Output: generate a richer hierarchy of connectivity between CE topics.

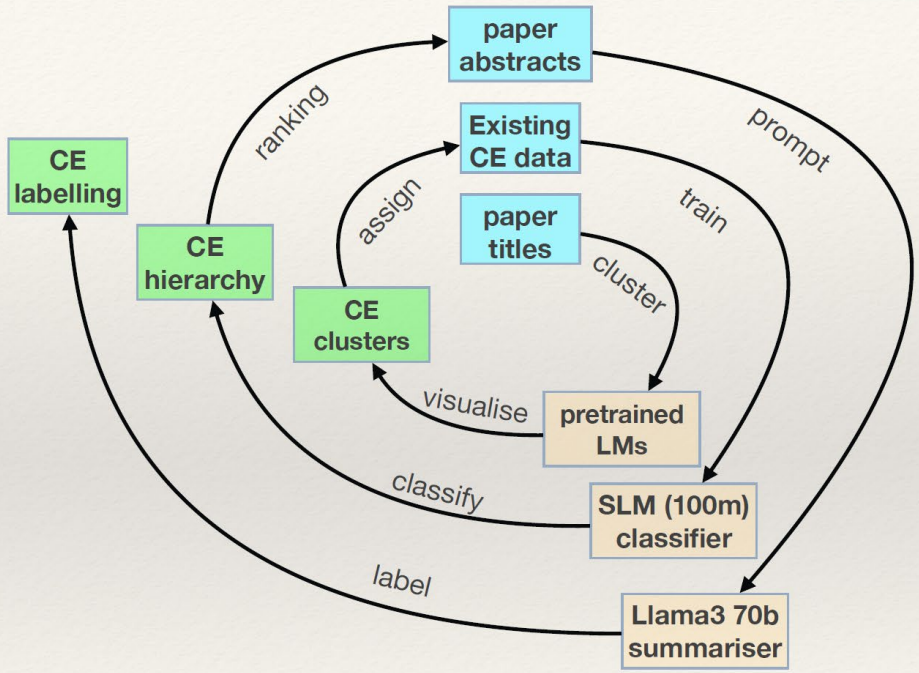


Conservation Evidence machine learning pipeline

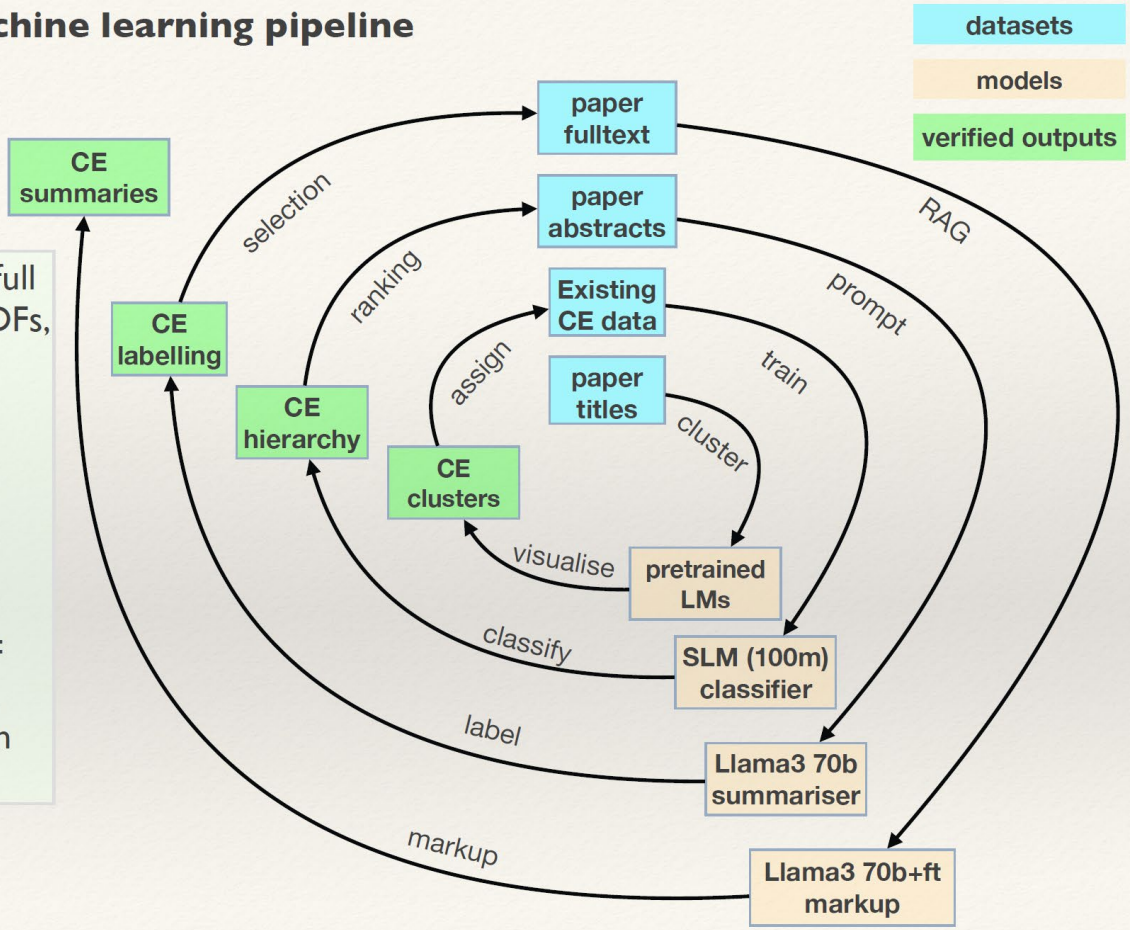
Data: Retrieve top ~2.5m paper abstracts. Required negotiations with publishers and Cambridge's journal subscriptions, and bespoke software to get the abstracts.

Model: switch to a large language model (Llama3 70b) to generate explanations and assign labels to each selected paper.

Output: interactive website of candidate evidence papers with summaries and labels.



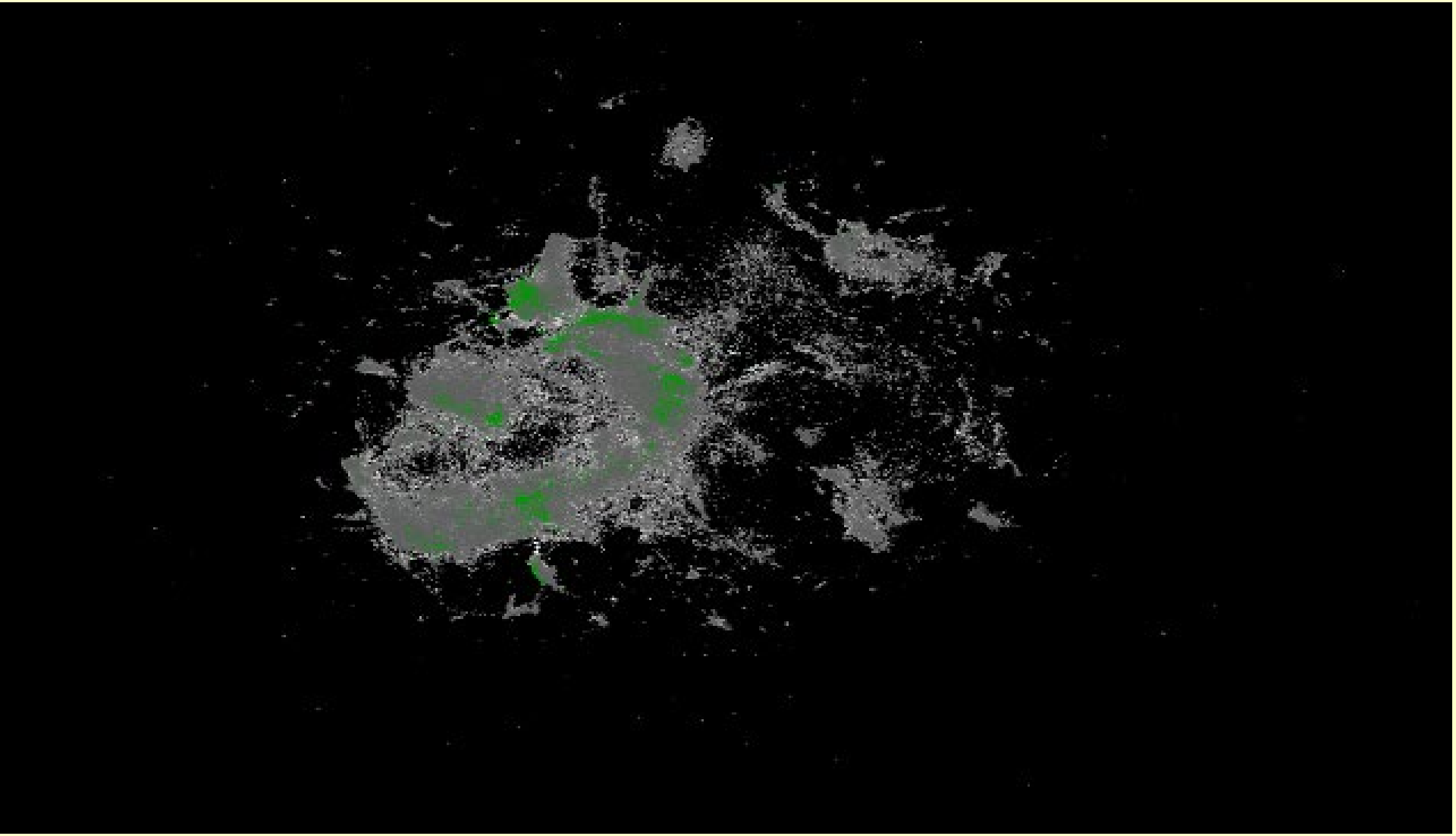
Conservation Evidence machine learning pipeline



Data: Retrieve top ~2.5m paper full text. Much more complex data (PDFs, graphs, scans).

Model: finetune a large language model with retrieval augmented generation (RAG) and multimodal image/text.

Output: markup the fulltext PDF with annotations that indicate to a human *where* the evidence is within the paper.



The models behind the interface

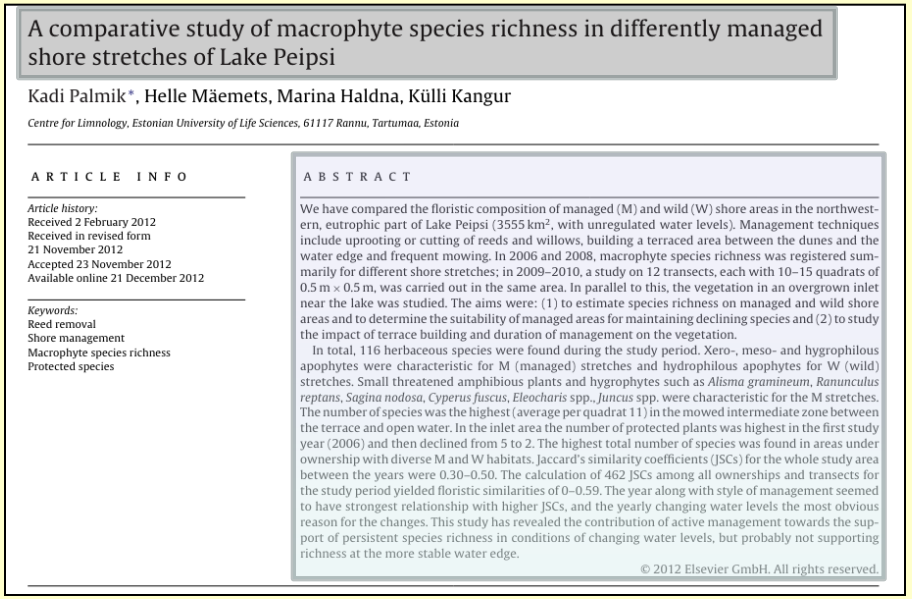
Classifier – 0.1 Billion Parameters

Yes/No

Llama 3 – 70 Billion Parameters

Finetuned with our Team's Guidance Document for how to assess papers

What is the target taxa/habitat?



A comparative study of macrophyte species richness in differently managed shore stretches of Lake Peipsi

Kadi Palmik*, Helle Mäemets, Marina Haldna, Külli Kangur

Centre for Limnology, Estonian University of Life Sciences, 61117 Rannu, Tartumaa, Estonia

ARTICLE INFO

Article history:
Received 2 February 2012
Received in revised form
21 November 2012
Accepted 23 November 2012
Available online 21 December 2012

Keywords:
Reed removal
Shore management
Macrophyte species richness
Protected species

ABSTRACT

We have compared the floristic composition of managed (M) and wild (W) shore areas in the northwestern, eutrophic part of Lake Peipsi (3555 km², with unregulated water levels). Management techniques include uprooting or cutting of reeds and willows, building a terraced area between the dunes and the water edge and frequent mowing. In 2006 and 2008, macrophyte species richness was registered summarily for different shore stretches; in 2009–2010, a study on 12 transects, each with 10–15 quadrats of 0.5 m × 0.5 m, was carried out in the same area. In parallel to this, the vegetation in an overgrown inlet near the lake was studied. The aims were: (1) to estimate species richness on managed and wild shore areas and to determine the suitability of managed areas for maintaining declining species and (2) to study the impact of terrace building and duration of management on the vegetation.

In total, 116 herbaceous species were found during the study period. Xero-, meso- and hygrophilous apophytes were characteristic for M (managed) stretches and hydrophilous apophytes for W (wild) stretches. Small threatened amphibious plants and hygrophytes such as *Alisma gramineum*, *Ranunculus reptans*, *Sagina nodosa*, *Cyperus fuscus*, *Eleocharis* spp., *Juncus* spp. were characteristic for the M stretches. The number of species was the highest (average per quadrat 11) in the mowed intermediate zone between the terrace and open water. In the inlet area the number of protected plants was highest in the first study year (2006) and then declined from 5 to 2. The highest total number of species was found in areas under ownership with diverse M and W habitats. Jaccard's similarity coefficients (JSCs) for the whole study area between the years were 0.30–0.50. The calculation of 462 JSCs among all ownerships and transects for the study period yielded floristic similarities of 0–0.59. The year along with style of management seemed to have strongest relationship with higher JSCs, and the yearly changing water levels the most obvious reason for the changes. This study has revealed the contribution of active management towards the support of persistent species richness in conditions of changing water levels, but probably not supporting richness at the more stable water edge.

Experimental removal of introduced hedgehogs improves wader nest success in the Western Isles, Scotland

Summary Introduced predators are a major threat to island avifaunas world-wide. In the Western Isles of Scotland, recently introduced hedgehogs Erinaceus europaeus have become a serious predator of bird eggs and are an important cause of declines of some waders (Charadrii). Experiments at two sites in 1998 measured the effect on wader nest success resulting from hedgehog removal from fenced exclosures. The nest success of waders inside the plots (where hedgehog densities were zero or low) was approximately 2·4 times that of birds nesting in the adjacent control areas (where hedgehog densities were high). There was no evidence of a compensatory increase in egg loss to native avian predators. The experiment was an integral part of a research programme to support wader conservation efforts. On the basis of the experiment it can be predicted that the removal of hedgehogs on a larger scale would result in a large increase in nest success. The study also tested the practicalities of using relatively cheap fences against hedgehogs. Fences were generally effective, but on dry sandy ground rabbits Oryctolagus cuniculus burrowed under fences, enabling some hedgehogs to re-enter plots. Well-designed fences could be used as a conservation tool, both as a barrier to protect key sites, and to aid the trapping and removal of hedgehogs. However, fences cannot be seen as a long-term solution to the problem. Radio-tagged hedgehogs removed from the plots and released nearby all attempted to re-enter the plots. Two tracking methods revealed that displaced hedgehogs followed fences for distances up to 500 m looking for an entry point. There was no evidence that hedgehogs were able, or even attempted, to climb over or dig under fences. The establishment of hedgehogs in the Western Isles provides an example of a threat to biodiversity following human-mediated redistribution of a species native to the UK to parts of the UK (Scottish islands) outside the species' natural range, an activity not currently prohibited by law. Policy action to deter or control species introduction should consider ecological range even within national boundaries.

🤔

Categories: Birds✏️

Reject

Accept

The study measures the effect of removing introduced hedgehogs on wader nest success in the Western Isles, Scotland.

This experiment tests a conservation action (hedgehog removal) and its impact on wild taxa (waders).

The study has clear implications for conservation efforts to protect waders.

Recommendation: include (Criteria A: Conservation Action Impact)

🤔

Categories: Birds ✏️

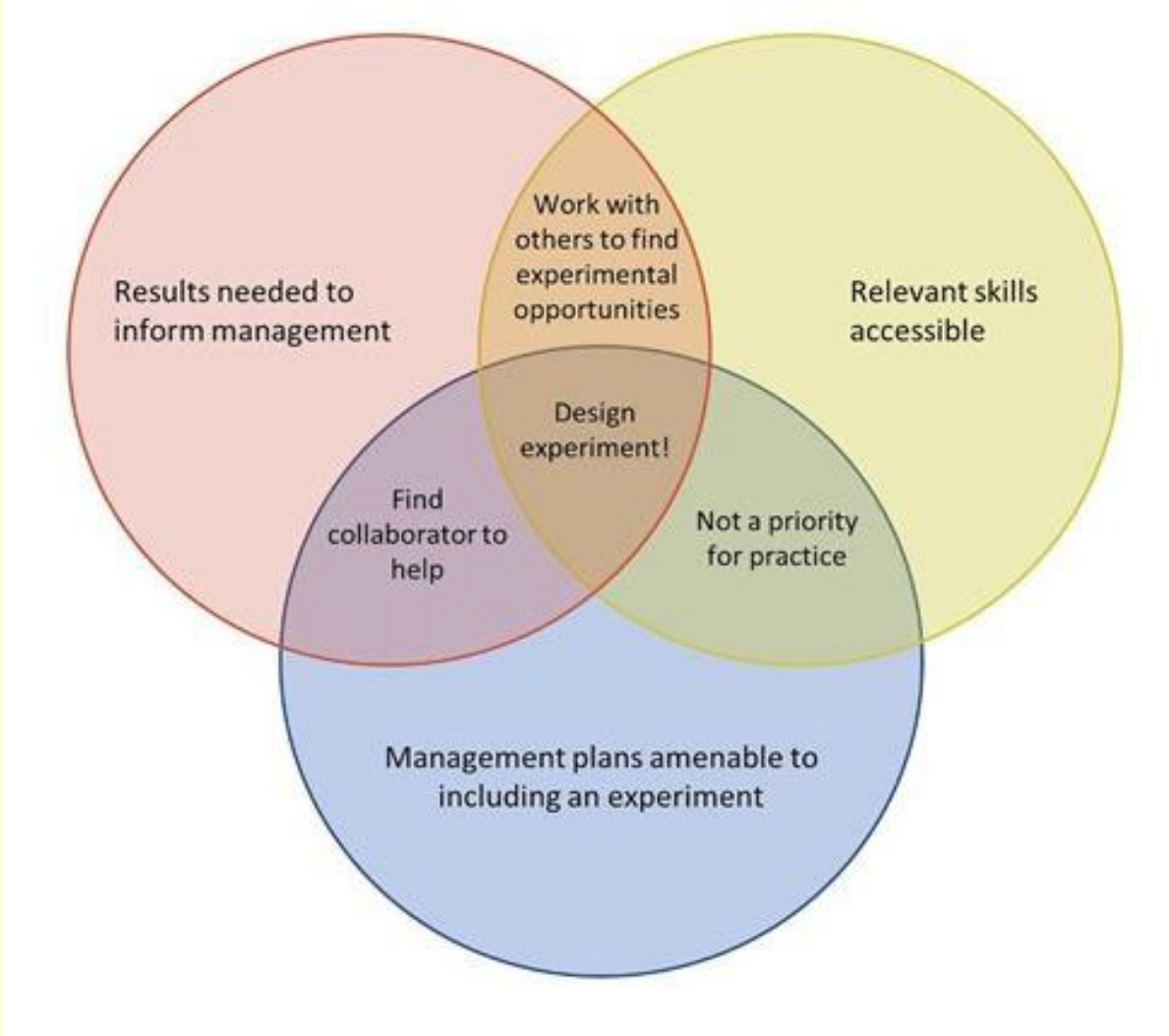
Reject

Accept

AI Horizon scan

Some AI Challenges

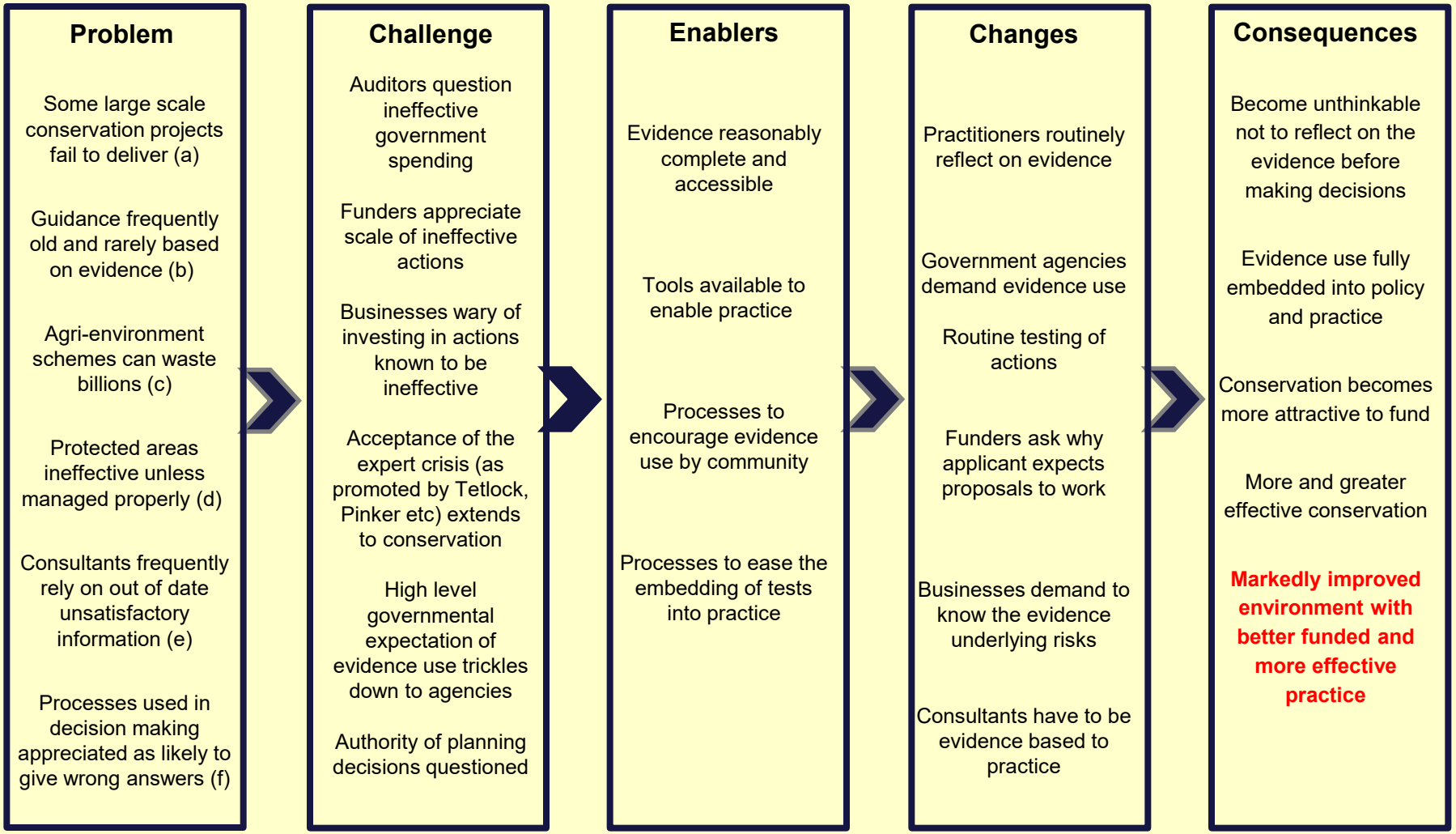
- Hallucinations (i.e. perceiving non-existent patterns to produce nonsensical and/or inaccurate outputs)
- *Distribution data can be used by those wishing to exploit species*
- *AI might change society in many ways such as changing employment or working practices that could have wide impacts including for conservation*
- *The capacity to run models may become restricted to few well resourced groups.*
- *AI computers currently use considerable energy for power and cooling*
- *AI foundational models are biased towards certain knowledge systems and ways of doing things (e.g. the economic paradigm of the West vs that of traditional communities etc)*
- *Risk of domination by fake material*
- *Options for bad actors.*

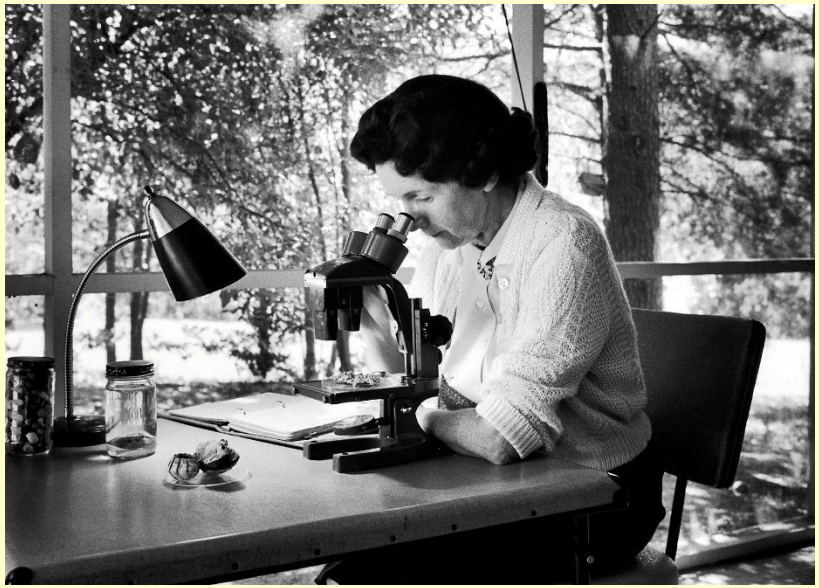

Results needed to inform management
Work with others to find experimental opportunities
Relevant skills accessible
Design experiment!
Find collaborator to help
Not a priority for practice
Management plans amenable to including an experiment

Checklist of eight actions for leaders to consider enacting

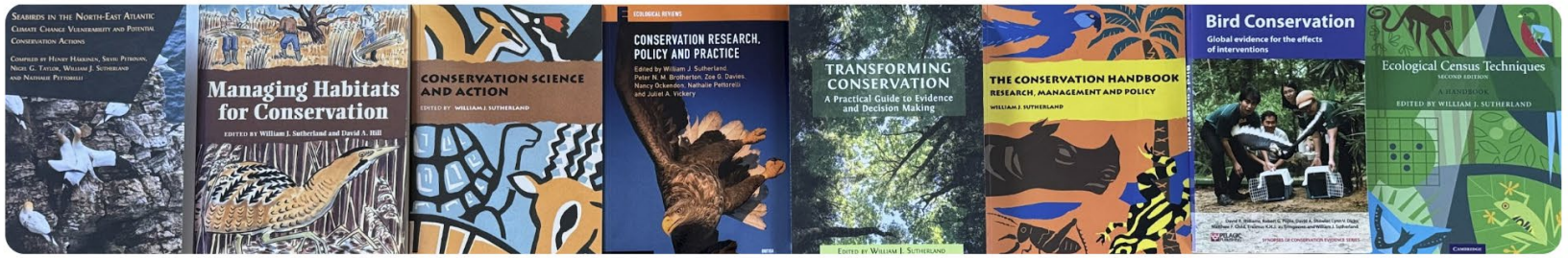
- ❑ Ensure that job advertisements for decision-makers specify the need to understand evidence-based practice.
- ❑ Make someone responsible for creating and delivering a strategy for evidence use.
- ❑ Establish a process of providing training on the principles of evidence use.
- ❑ State that reporting on evidence use (e.g. an outline of how evidence was incorporated) is expected in plans and reports produced by the organisation.
- ❑ Establish a process so that contracted reports require a statement on evidence use.
- ❑ Include the standard question, "Does your manager routinely ask about the underlying evidence?", in annual reviews of practitioners and decision-makers.
- ❑ Create a process that ensures applications for funding include reflections on the underlying evidence.
- ❑ Make someone responsible for ensuring that tests of an action are regularly initiated, for example at least annually, and results published.

This checklist can be downloaded from Transforming Conservation and be modified and used.


Problem
Some large scale conservation projects fail to deliver (a)
Guidance frequently old and rarely based on evidence (b)
Agri-environment schemes can waste billions (c)
Protected areas ineffective unless managed properly (d)
Consultants frequently rely on out of date unsatisfactory information (e)
Processes used in decision making appreciated as likely to give wrong answers (f)
Challenge
Auditors question ineffective government spending
Funders appreciate scale of ineffective actions
Businesses wary of investing in actions known to be ineffective
Acceptance of the expert crisis (as promoted by Tetlock, Pinker etc) extends to conservation
High level governmental expectation of evidence use trickles down to agencies
Authority of planning decisions questioned
Enablers
Evidence reasonably complete and accessible
Tools available to enable practice
Processes to encourage evidence use by community
Processes to ease the embedding of tests into practice
Changes
Practitioners routinely reflect on evidence
Government agencies demand evidence use
Routine testing of actions
Funders ask why applicant expects proposals to work
Businesses demand to know the evidence underlying risks
Consultants have to be evidence based to practice
Consequences
Become unthinkable not to reflect on the evidence before making decisions
Evidence use fully embedded into policy and practice
Conservation becomes more attractive to fund
More and greater effective conservation
Markedly improved environment with better funded and more effective practice




“The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction.”
—Rachel Carson



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Who I hope to inspire and what I hope they will learn

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My intention is to inspire young ecologists and conservationists, provide additional material for undergraduate and postgraduate students and provide intriguing facts and amusing examples for my friends and colleagues who are experienced ecologists and conservation biologists.

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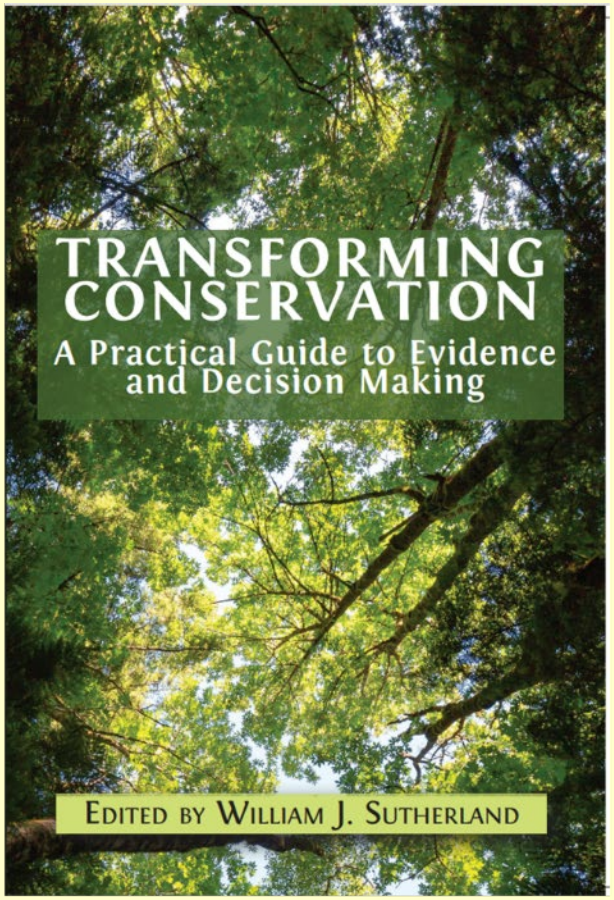
Reasons to be cheerful

Anna Sutherland (aged 10) school report for Science

'Anna is progressing well,

but must take a more evidence-based approach.'



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