Prioritising Invasive Non-Native Species: from horizon scanning to Risk Assessments

Helen Roy and many more

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NNSS
GB non-native species secretariat

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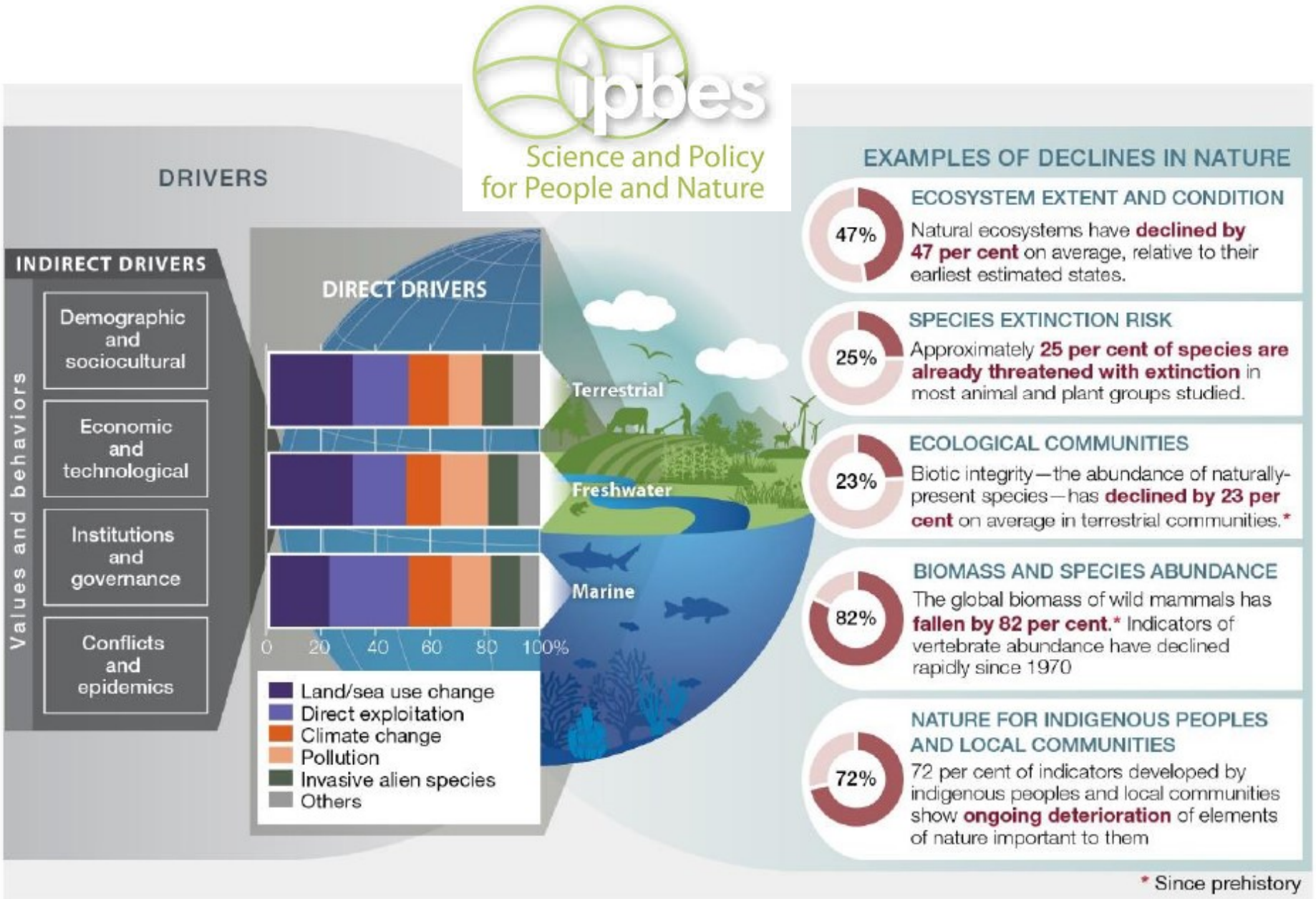
Anticipating IPBES IAS global assessment




CONSULATE HOTEL
COFFEE
CAKES
HOT CHOCOLAT

Systematic examination of potential threats and opportunities within a given context

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Approaches to horizon scanning

Table 1.1 Overview of broad approaches to horizon scanning including description, strengths and weaknesses. Examples relate to publications from the IAS-research area. Modified from Sutherland & Woodroof (2009).

Method	Detail	Strength	Weakness	IAS relevant examples
Interview	One-to-one questioning; structured without debate or open	Good at getting key individuals perspectives on the future	No interaction between participants; possible bias due to selection of experts	–
Open fora	Online platform (Wiki)	Wisdom of the crowd, broadest possible range of contributors	Unstructured without quality control	–
Questionnaire	Expert consultation through pre-defined questions	Provides an overview of opinion on a specific theme	No interaction; possible bias due to selection of experts and how questions are phrased	–
Literature review	Extensive review of existing literature	Broad approach underpinned by existing knowledge (if peer-reviewed)	Unavailability of published reports or expert opinion; delay between observation and publication	(Parrott et al. 2009; Thomas 2011)
Modelling approach	Quantitative approach to derive predictions	Available data used to construct models to derive predictions	Depends on detailed life-history datasets which for many species are lacking	(Gallardo, Aldridge 2013)
Survey and experiment	Surveys of the environment in some cases coupled with experimentation	Realistic data derived	Labour intensive and expensive	(Richardson, Pyšek 2006)

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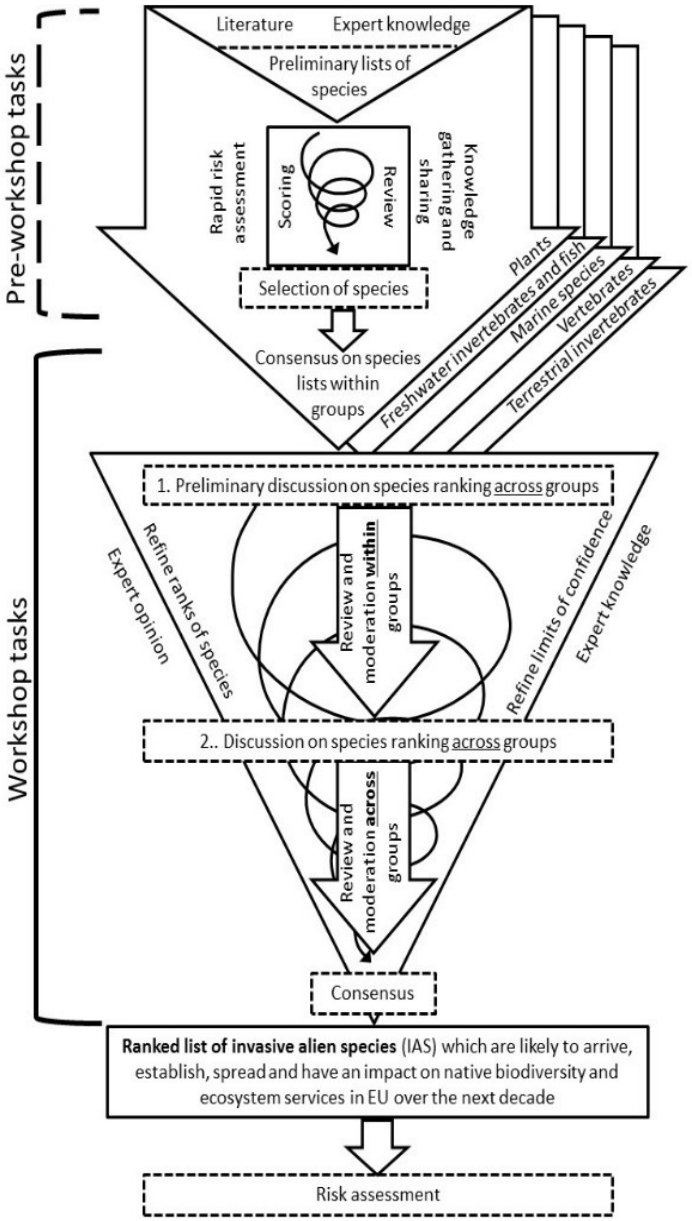
Horizon scanning…

Systematic examination of potential threats and opportunities within a given context



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Horizon scanning…

Global Change Biology

PRIMARY RESEARCH ARTICLE | Open Access

Developing a list of invasive alien species likely to threaten biodiversity and ecosystems in the European Union

Global Change Biology

Global Change Biology (2014) **20**, 3859–3871, doi: 10.1111/gcb.12603

Horizon scanning for invasive alien species with the potential to threaten biodiversity in Great Britain

…prioritising species for risk assessment

…implementing surveillance, monitoring and action

L 189/4 EN Official Journal of the European Union 14.7.2016

COMMISSION IMPLEMENTING REGULATION (EU) 2016/1141

of 13 July 2016

adopting a list of invasive alien species of Union concern pursuant to Regulation (EU) No 1143/2014 of the European Parliament and of the Council

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Biol Invasions (2019) 21:2107–2125
https://doi.org/10.1007/s10530-019-01961-7

ORIGINAL PAPER

Horizon scanning for invasive alien species with the potential to threaten biodiversity and human health on a Mediterranean island

Jodey Peyton · Angeliki F. Martinou · Oliver L. Pescott · Monica Demetriou ·

DARWIN INITIATIVE

Horizon scanning across UKOTs

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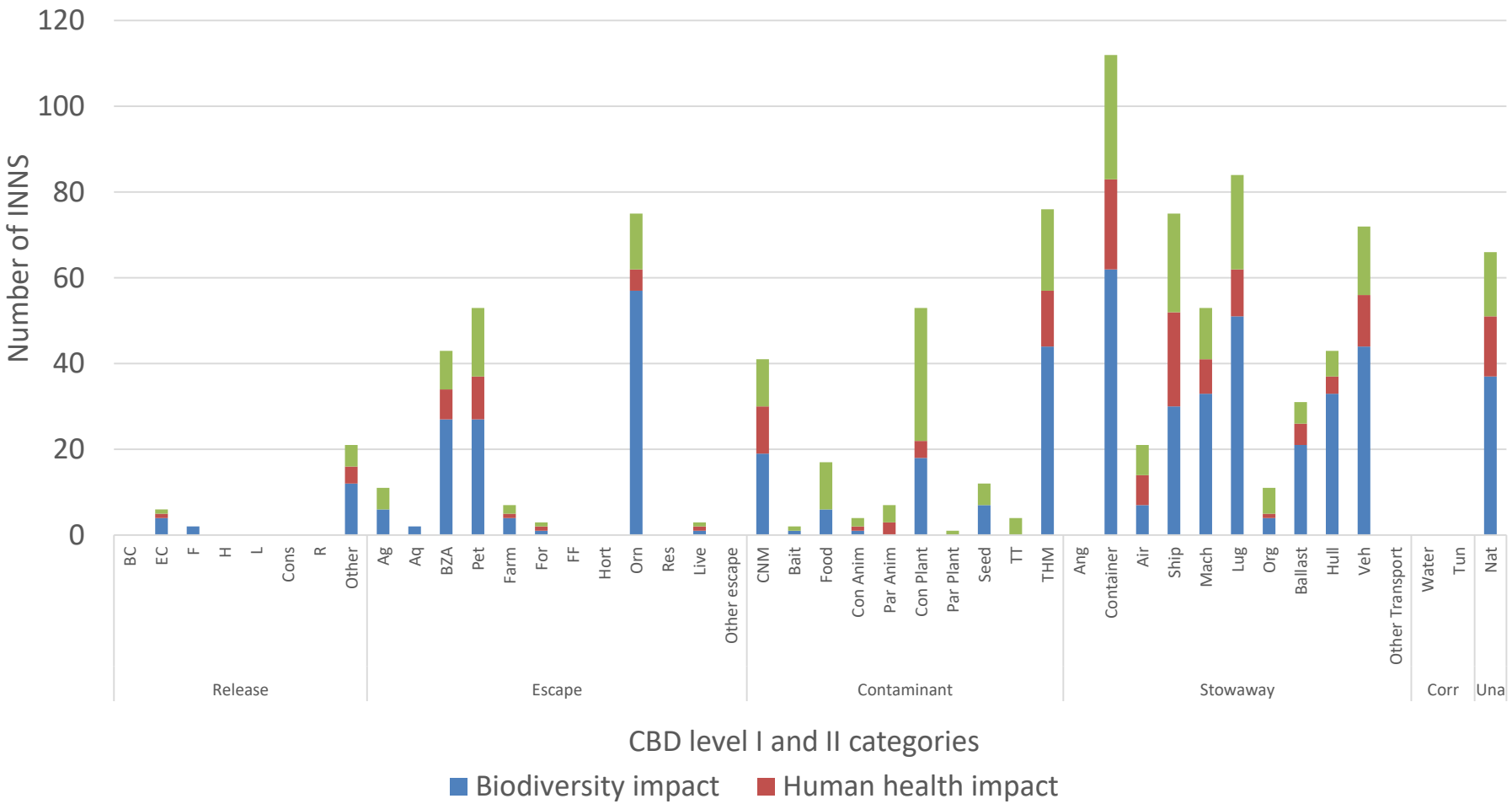
Top invaders

		Frequency of occurrence
Perna viridis	Asian green mussel	21
Wasmannia auropunctata	little fire ant	18
Lissachatina fulica	giant African land snail	14
Rattus norvegicus	brown rat	13
Aedes albopictus	Asian tiger mosquito	11
Pterois miles	Lionfish	11
Magallana gigas	Pacific oyster	11
Aedes aegypti	yellow fever mosquito	10
Mytilus galloprovincialis	Mediterranean mussel	10




Pathways across all UKOTs



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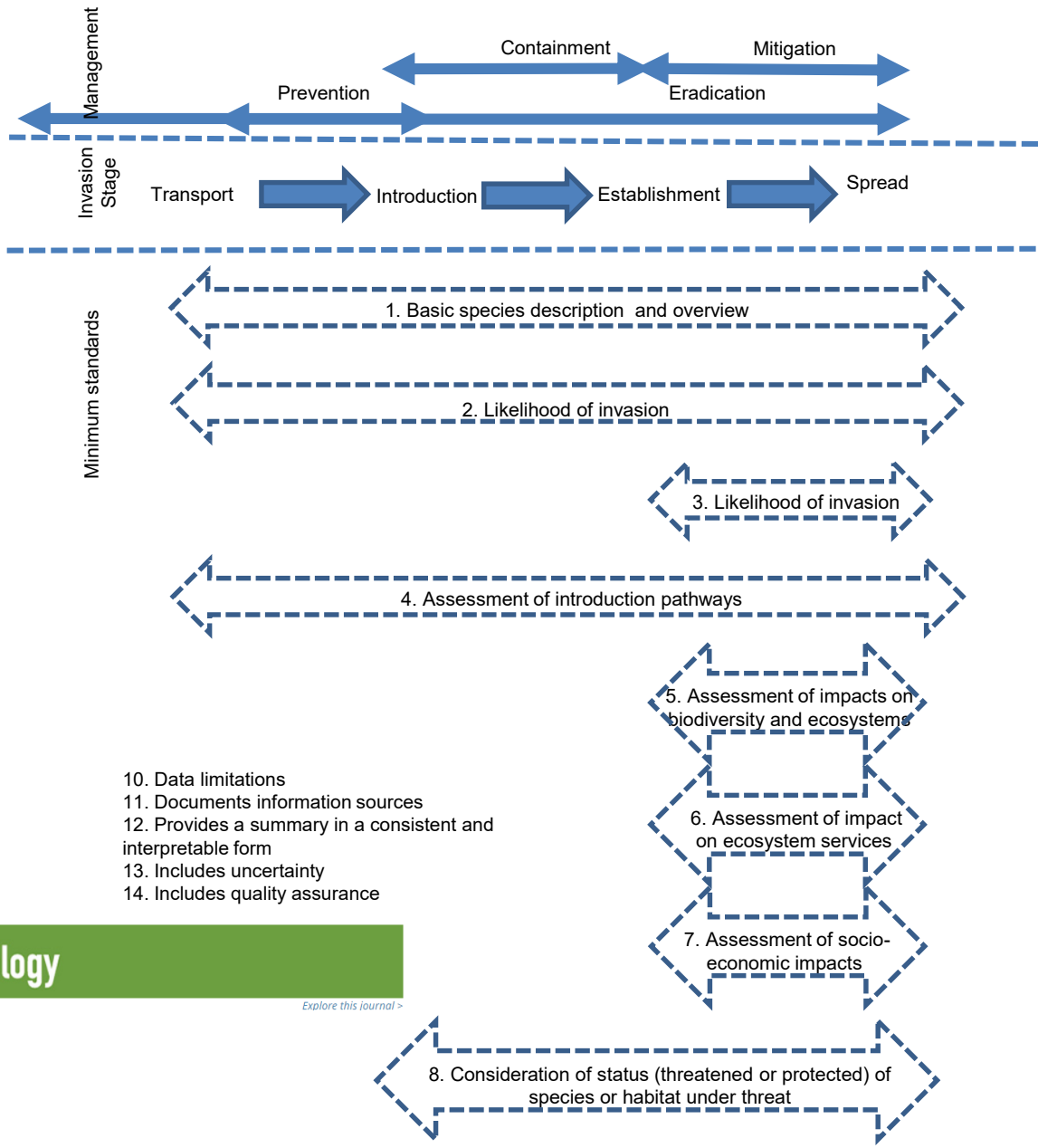
Minimum standards for risk assessment

- Evidence for ecosystem service impacts
- Consideration of climate change
- Socio-economic benefits



Journal of Applied Ecology

Explore this journal >

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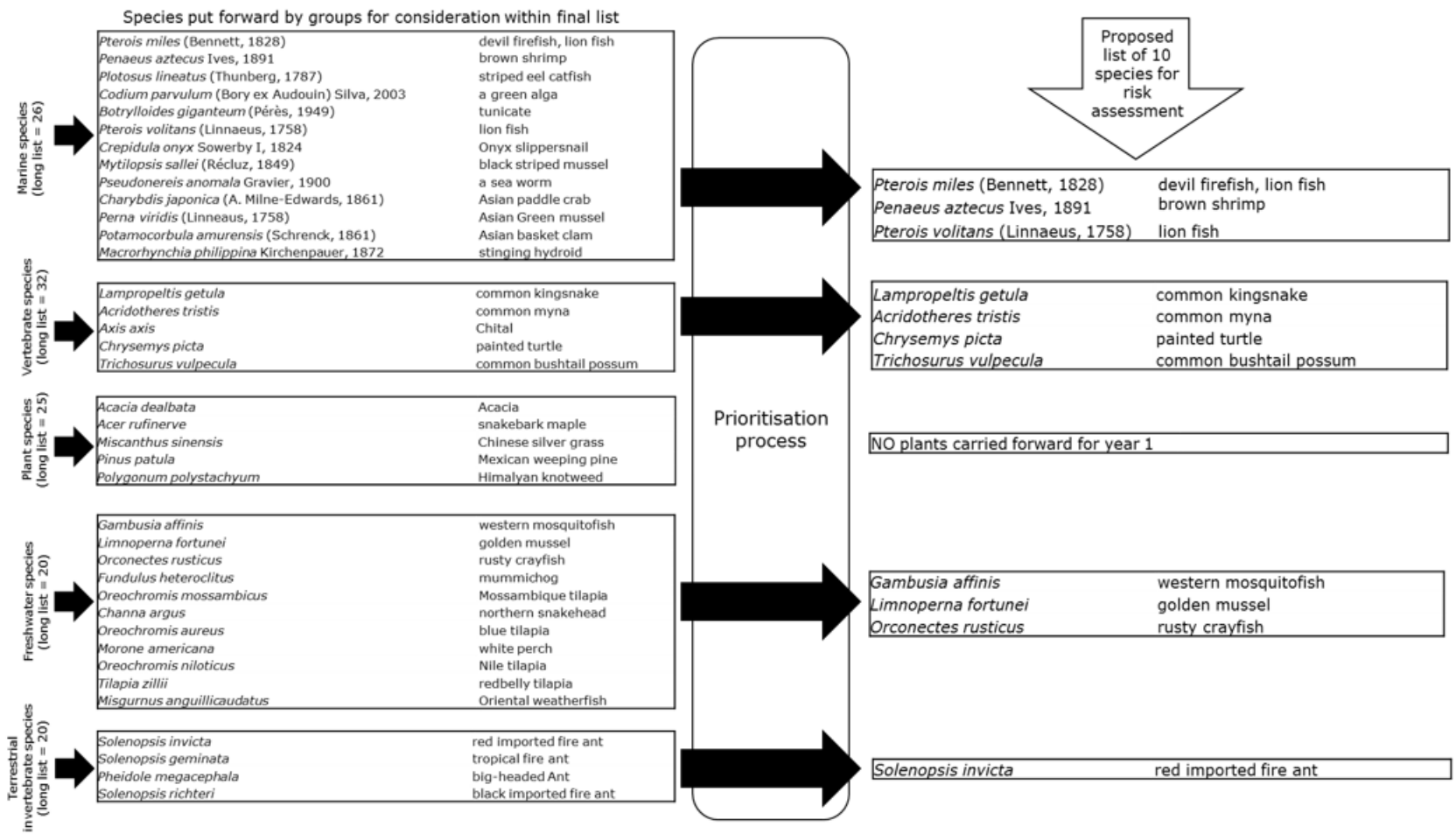
Prioritising species for risk assessment

Inception Report ENV.B2.ETU/2016/0013

Figure 1: Selection of the proposed list of ten species for risk assessment highlighting the process leading from long lists of species to within expert group prioritisation and finally across group prioritisation. A crude scoring process (documented in final report of ENV.B.2/ETU/2014/0016) was used to rank the species into broad risk categories and then other criteria were used to produce the final proposed list including current distribution, practicalities and effectiveness of management.



Grappling with socio-economic impacts

Methods in Ecology and Evolution

BRITISH ECOLOGICAL SOCIETY

Received: 27 April 2017 | Accepted: 12 June 2017

DOI: 10.1111/2041-210X.12844

RESEARCH ARTICLE

Methods in Ecology and Evolution

Socio-economic impact classification of alien taxa (SEICAT)

Sven Bacher[1,2] | Tim M. Blackburn[3,4,5] | Franz Essl[6] | Piero Genovesi[7] | Jaakko Heikkilä[8] | Jonathan M. Jeschke[9,10,11] | Glyn Jones[12] | Reuben Keller[13] | Marc Kenis[14] | Christoph Kueffer[2,15] | Angeliki F. Martinou[16] | Wolfgang Nentwig[17] | Jan Pergl[18] | Petr Pyšek[18,19] | Wolfgang Rabitsch[20] | David M. Richardson[2] | Helen E. Roy[21] | Wolf-Christian Saul[9,10,11] | Riccardo Scalera[22] | Montserrat Vilà[23] | John R. U. Wilson[2,24] | Sabrina Kumschick[2,24]

"...a novel standardised method for classifying alien taxa in terms of the magnitude of their impacts on human well-being, based on the capability approach from welfare economics. The core characteristic of this approach is that it uses changes in people's activities as a common metric for evaluating impacts on well-being..."

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Inspiring places; Inspiring people

Thank you

AlienCSI

cost
EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY

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RTD Framework Programme

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