RESEARCH INSTITUTE
NATURE AND FOREST

AGENTSCHAP
NATUUR & BOS

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Management pioritization

Risk analysis :

- Risk assessment

- Risk management:
  strategies to mitigate the risk

- Risk communication

Management pioritization

« Eradication ? »

« Which method ? »

« Which species ? »

« When ? »

« Containment ? »

« How much does it cost ? »

« Where ? »

« How long ? »

Risk management: strategies to mitigate the risk

- Effectiveness
- Practicality
- Cost
- Acceptability
- Negative effects
- Window of opportunity
- Likelihood of reintroduction

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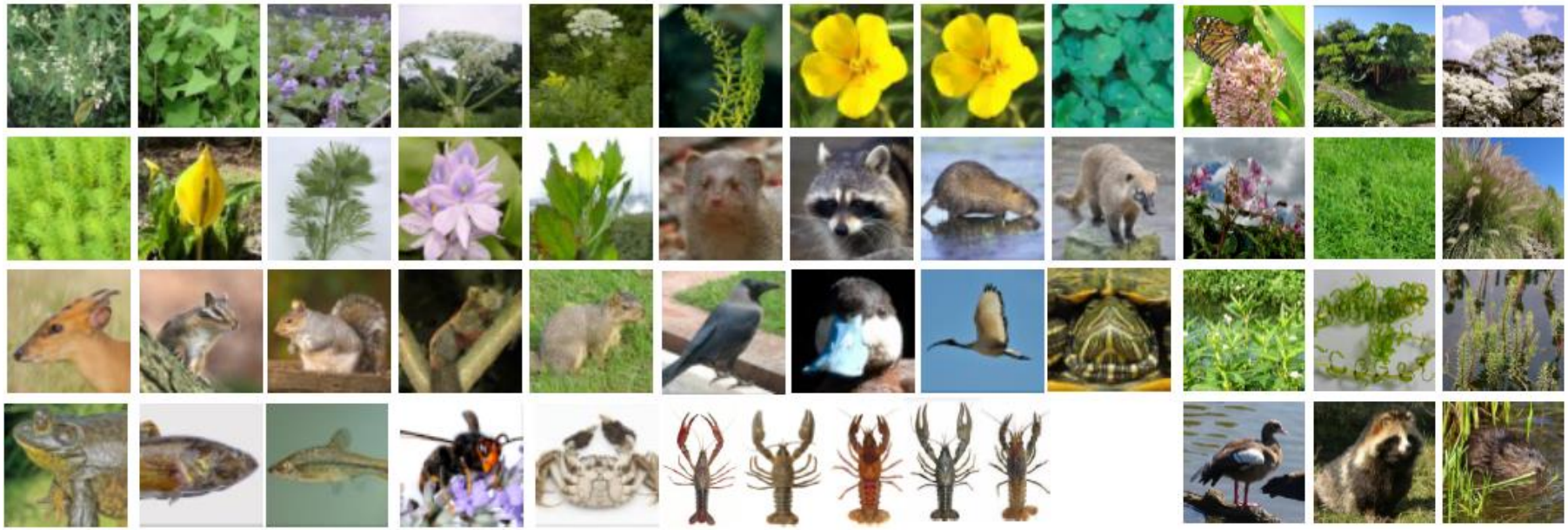
ORIGINAL PAPER

Risk management to prioritise the eradication of new and emerging invasive non-native species

Olaf Booy · Aileen C. Mill · Helen E. Roy · Alice Hiley · Niall Moore · Pete Robertson · Simon Baker · Matt Brazier · Mathilde Bue · Richard Bullock · Steve Campbell · Dominic Eyre · Jim Foster · Maggie Hatton-Ellis · Jo Long · Craig Macadam · Camilla Morrison-Bell · John Mumford · Jonathan Newman · David Parrott · Robin Payne · Trevor Renals · Eoina Rodgers · Mark Spencer · Paul Stebbing · Mike Sutton-Croft · Kevin J. Walker · Alastair Ward · Stan Whittaker · Gabe Wyn

Management pioritization

Criteria	Score				
	1	2	3	4	5
Effectiveness	Very ineffective	Ineffective	Moderate effectiveness	Effective	Very effective
Practicality	Very impractical	Impractical	Moderate practicality	Practical	Very practical
Cost	> € 10M	€ 1-10M	€ 200k - 1M	€ 50-200k	< €50k
Negative impact	Minimal	Minor	Moderate	Major	Massive
Acceptability	Very unacceptable	Unacceptable	Moderate acceptability	Acceptable	Very acceptable
Window of opportunity	< 2 months	2 months - 1 year	1 – 3 years	4-10 years	>10 years
Likelihood of reintroduction	Very likely	Likely	Moderate likelihood	Unlikely	Very unlikely
Conclusion (overall feasibility of eradication)	Very low	Low	Medium	High	Very high



What we did in Belgium …

- Up to date distribution of species
- Best management techniques based on available evidence
- Choose between eradication - spread limitation - long term management
- Capture the opinion of experts community
- Easy and automated process to maximize expert involvement and facilitate the work
- Ensure take-up of manageability assessment results

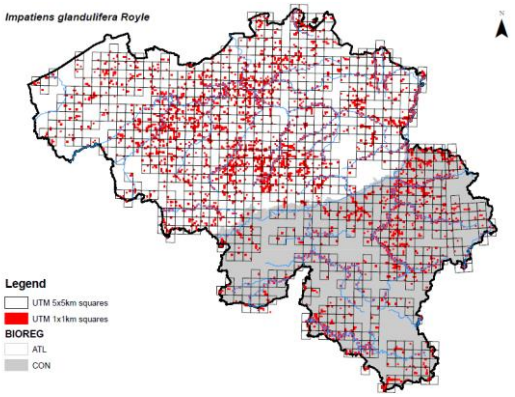
What we did in Belgium …

Belgian Manageability Assessment 2017

Prepared by : Département d'Etude du Milieu Naturel et Agricole (SPW-DEMNA) - Research Institute for Nature and Forest (INBO) - National Scientific Secretariat on Invasive Species - Belgian Biodiversity Platform (BBPF).

Himalayan balsam *Impatiens glandulifera*
(reuzenbalsemien, Balsamine de L'Himalaya)

Invasion scenario



Invasion situation and history in Belgium

Reliability of the distribution

Current management practice

Invasion situation in neighboring countries

Distribution data

What we did in Belgium …

Belgian Manageability Assessment 2017

Prepared by : Département d'Etude du Milieu Naturel et Agricole (SPW-DEMNA) - Research Institute for Nature and Forest (INBO) - National Scientific Secretariat on Invasive Species - Belgian Biodiversity Platform (BBPF).

Management strategies

Realistic management options

- *Eradication*
- *Spread limitation*

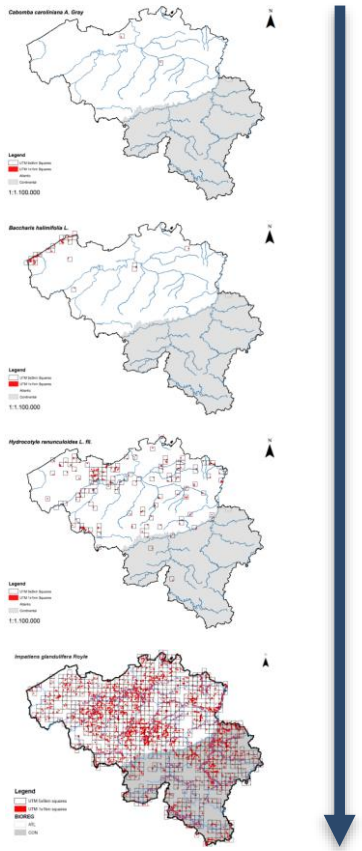
Methods and techniques

Post-intervention monitoring

Management strategies

Belgian Manageability Assessment 2017

Prepared by : Département d'Etude du Milieu Naturel et Agricole (SPW-DEMNA) - Research Institute for Nature and Forest (INBO) - National Scientific Secretariat on Invasive Species - Belgian Biodiversity Platform (BBPF).

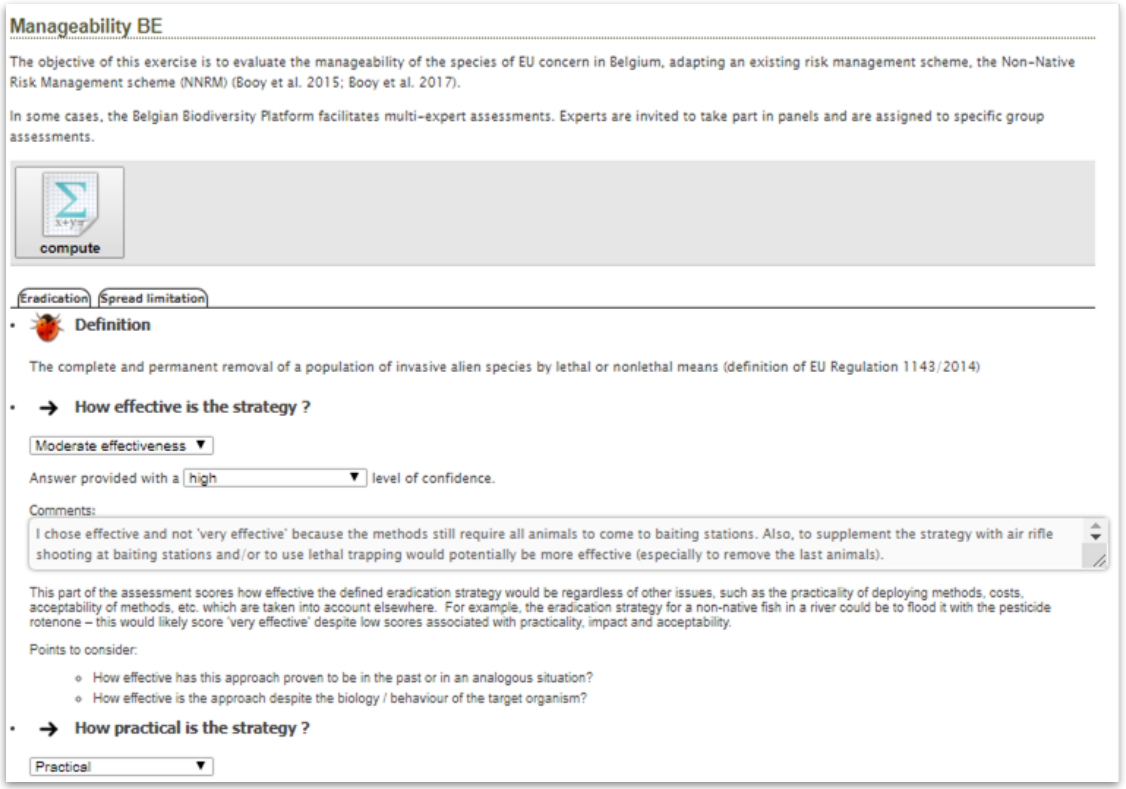


Spread limitation options

1. Stand-still principle with a single or a few patches
2. Stand-still principle with core areas
3. Elimination of most dispersive populations
4. Maintenance of pest free areas

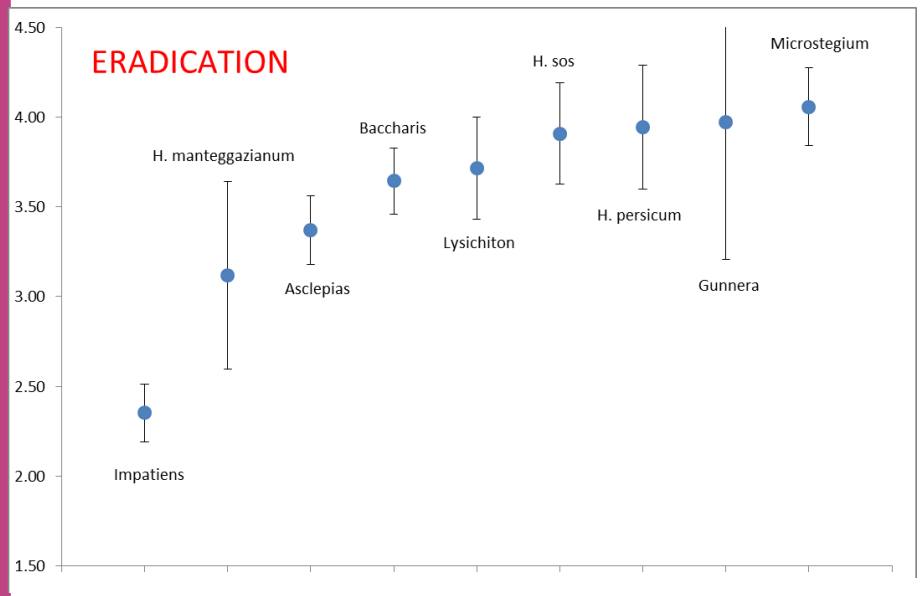
Expert involvement

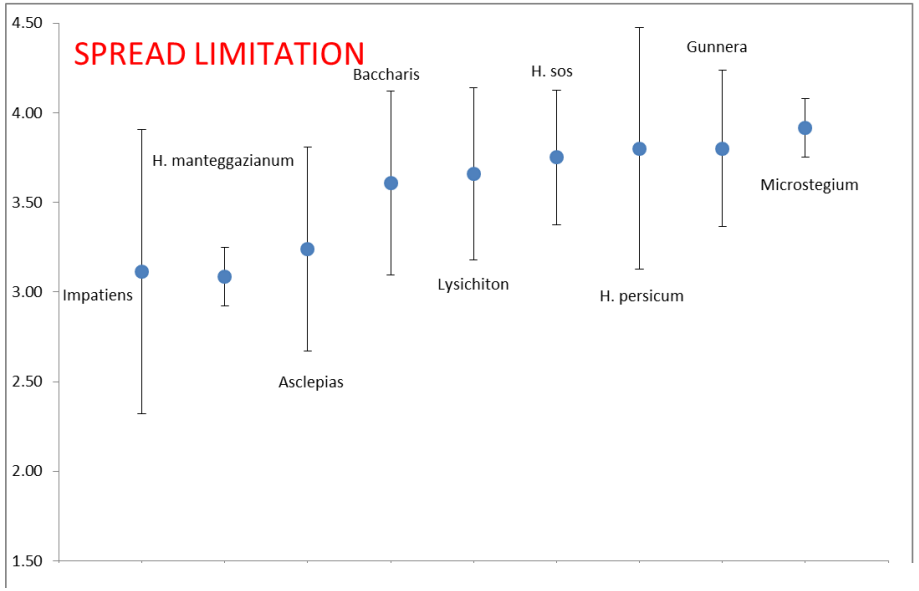
- 32 Experts (16 INBO)
- 153 assessments
- Online assessments
- Multi-expert assessments



Terrestrial plants

(5 experts per species)





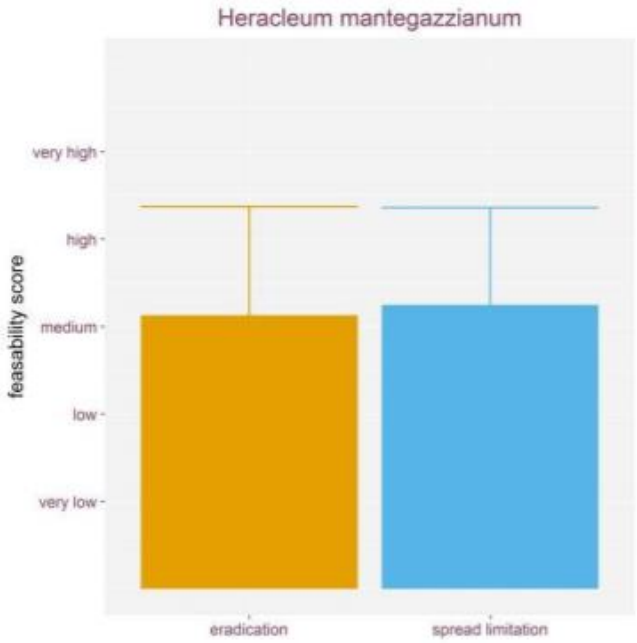
1 = Very unfeasible ; 2 = Unfeasible ; 3 = Moderately feasible ; 4 = Feasible ; 5 = Very feasible

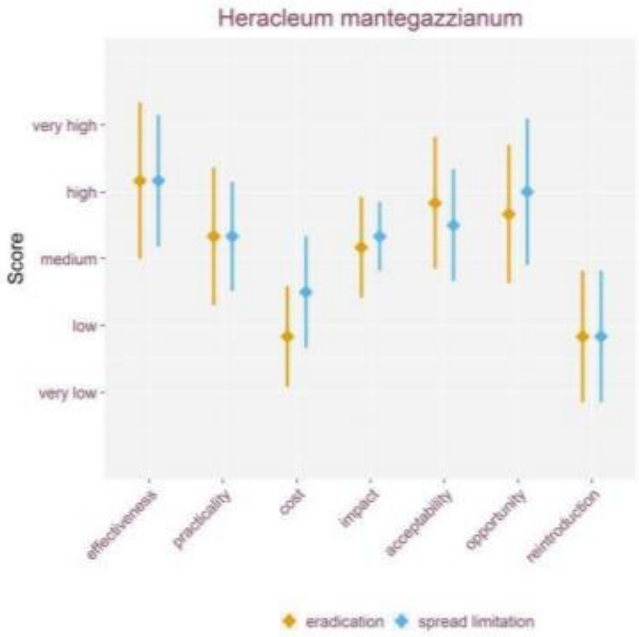
Risk assessment score	Feasibility of eradication				
	Very low (1)	Low (2)	Medium (3)	High (4)	Very high (5)
Very high (5)	Medium^{++}	Medium-high^{+}	High	Very high	Highest
High (4)	Medium-low^{+}	Medium	Medium-high	High	Very high
Medium (3)	Low	Medium-low	Medium	Medium-high	High
Low (2)	Very low	Low	Medium-low	Medium	Medium-high
Very low (1)	Lowest	Very low	Low	Medium-low	Medium

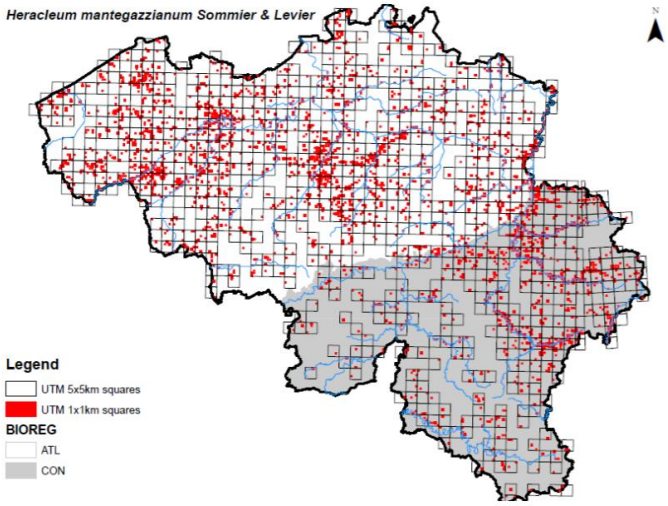
Prevention

Control

Eradication

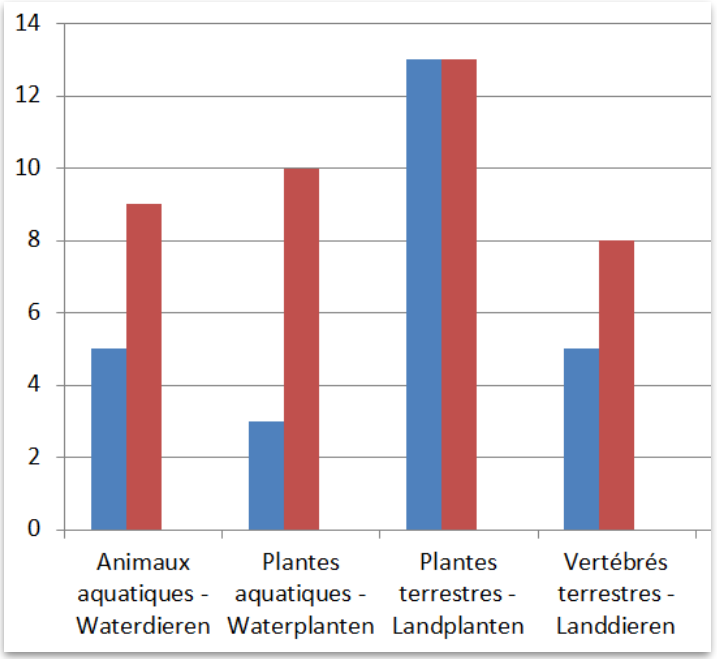

Heracleum mantegazzianum
feasability score
very high
high
medium
low
very low
eradication
spread limitation

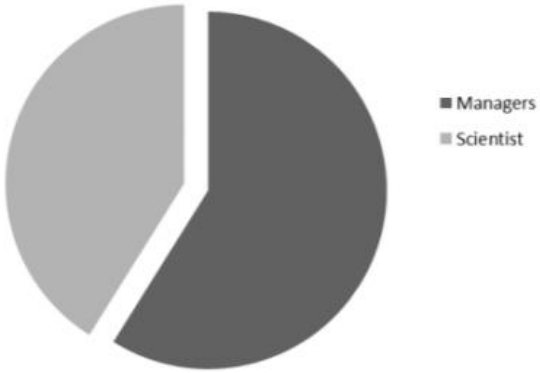

Heracleum mantegazzianum
Score
very high
high
medium
low
very low
effectiveness
practicality
cost
impact
acceptability
opportunity
reintroduction
eradication
spread limitation


Heracleum mantegazzianum Sommier & Levier
N
Legend
UTM 5x5km squares
UTM 1x1km squares
BIOREG
ATL
CON

Workshop

- 87 attendants
- >60 % field managers
- moderated discussion in taxon groups
- consensual recommendation
- no agreement → document + voting





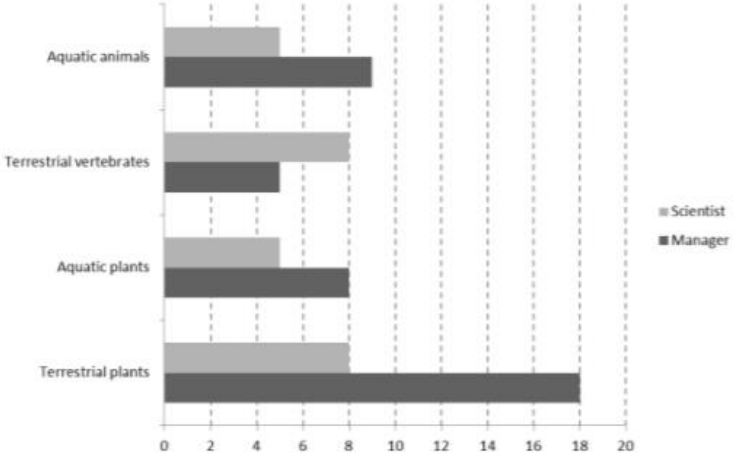


Figure 1: General profile of attendants (left) and split out per thematic group (right) attending the Workshop on Management of IAS of Union Concern in Belgium (12 December 2018, Brussels).

Workshop

Vlaanderen
is wetenschap

Workshop

Vlaanderen
is wetenschap

- regional management objectives
- management regulations
- evaluation
- adaptive management cycle

What we learned in Belgium …

- A decision on species management must rely on robust evidence
- Implicate managers and decision makers in the process from early stages
- Requires substantial technical and scientific expertise
- Human factor is the main challenge

Management feasibility survey

I believe eradicating Rosa rugosa from the Atlantic coastal area is feasible *

- [ ] I honestly have no clue
- [ ] Yes, totally, this should be the goal
- [ ] No, I think there are no effective methods available
- [ ] No, I think this would be too costly
- [ ] No, I think this would face disapproval or resistance from individuals, groups or sectors.
- [ ] No, I think management would do more harm than good
- [ ] No, the species is already too widespread, it is already too late
- [ ] No, I think there would be instant recolonisation from other infected areas