

Imperial College
London

**Benefit:risk characterization
and assessment for microbial bio-control
programs**

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A few key points

- **Risk paradigm should include benefits**
 - *Wolbachia* mosquitoes in Australia
- **Consistent and simple estimates of harm from alternative controls**
 - Desert locust microbial control in Senegal
- **Consistent subjective assessments of risks (and benefits) for the organism**
 - Eagle owl/invasive species risk assessments in Britain

Wolbachia+mosquito risks (Dengue)

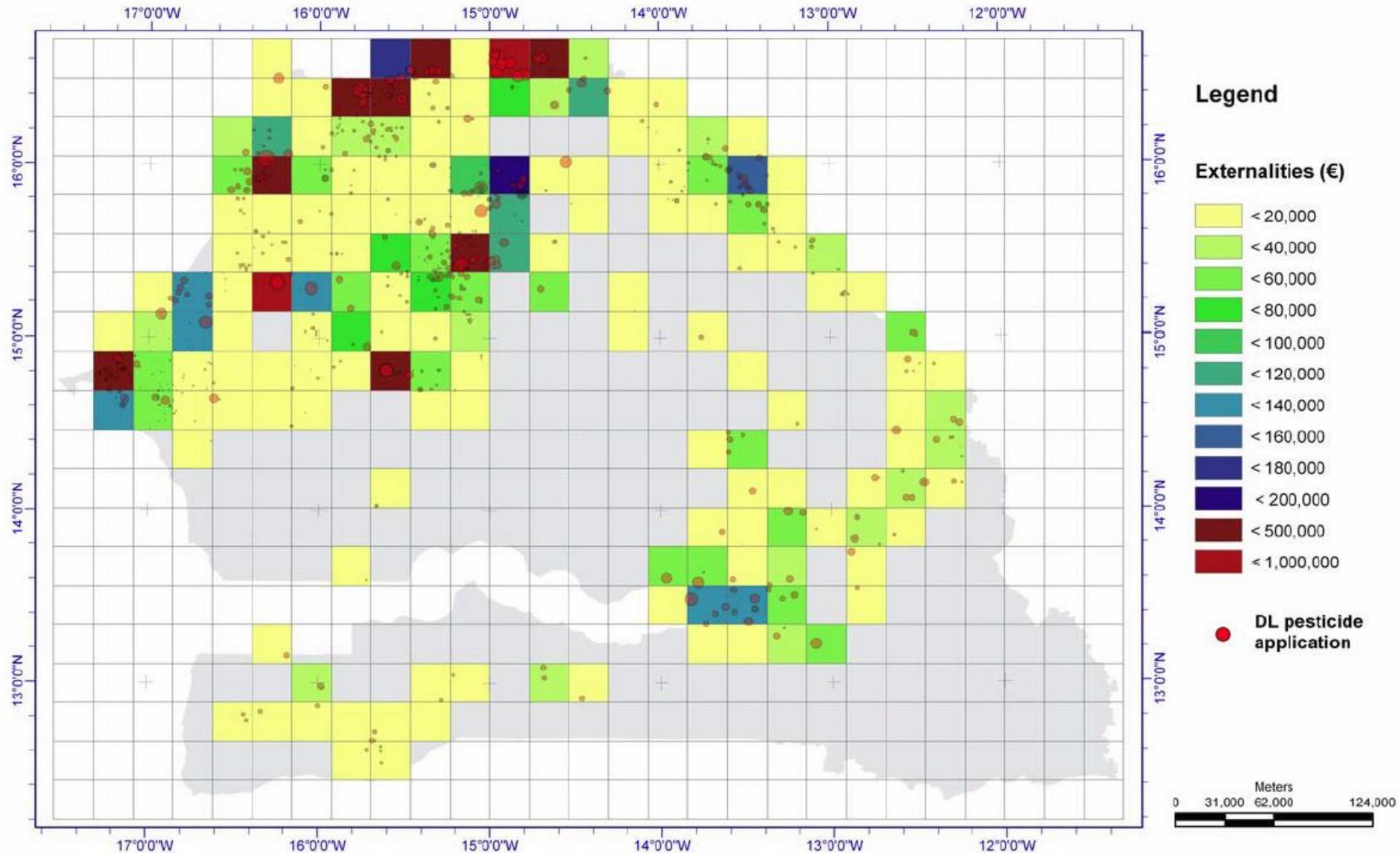
Risk to test: Release would cause more harm than *status quo*?

		CONSEQUENCE					
		<u>Negligible</u>	<u>Very Low</u>	<u>Low</u>	<u>Moderate</u>	<u>High</u>	
LIKELIHOOD	<u>Negligible</u>	Negligible Risk Dengue V. Comp. Vertebrate Tran.	Negligible Risk Real Estate Std. Public health	Negligible Risk	Negligible Risk Ecology Geographical range Health Care Host Preference Insecticide resistance Invertebrate Transfer	Negligible Risk Labour Avail.	Very Low Risk
	<u>Very Low</u>	Negligible Risk	Negligible Risk Cause More Harm Dengue Trans. Non-Deng. Vector Other Pathogens Tourism	Negligible Risk Dengue Evol. Economic Eff. Nuisance Biting	Negligible Risk Density Ecological Niche Feeding Freq Mosq. Man. Eff. Need for Control	Very Low Risk	Low Risk
	<u>Low</u>	Negligible Risk	Negligible Risk	Negligible Risk Monitoring	Very Low Risk Avoidance Strat. Household Control Mosquito Density Wolbachia Fitness	Low Risk	Moderate Risk
	<u>Moderate</u>	Negligible Risk	Negligible Risk	Very Low Risk	Low Risk Perceptions	Moderate Risk	High Risk
	<u>High</u>	Negligible Risk	Very Low Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk
	<u>Very High</u>	Negligible Risk	Very Low Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk

Locust control externality costs

Pesticide	Total direct cost	Estimated Environmental Externality
Malathion 960 UL	€1,229,242	€5,436,618
Fenitrothion 500 UL	€325,697	€1,061,630
Cyhalothrin 40 UL	€136,691	€28,580
Chlorpyrifos 240 UL	€339,698	€437,407

Externalities - 25 km grid Senegal



Eagle owl risk assessment in Britain

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Stop Fera/Defra Culling European Eagle Owls in Britain

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Discussions

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Basic Info

Name:

Stop Fera/Defra Culling European Eagle Owls in Britain

Category:

Common Interest - Beliefs & Causes

Description:

Fera or The Food and Environment Research Agency, are circulating a Risk Assessment Document which could if unchallenged result in the culling of European Eagle Owls in Britain, they say that they are birds that people have released and that they are a danger to other wildlife. The E.Eagle Owl was once a British Owl and was hunted to extinction don't let this happen again, there is proof that some of these are wild owls that have come from Europe. This will give the message to all people who... (read more)

Privacy type:

Open: All content is public.

"IN THE END WE WILL CONSERVE ONLY WHAT WE LOVE; WE WILL LOVE ONLY WHAT WE UNDERSTAND; WE WILL UNDERSTAND ONLY WHAT WE ARE TAUGHT" .BD.

Eagle owl risk assessment in Britain

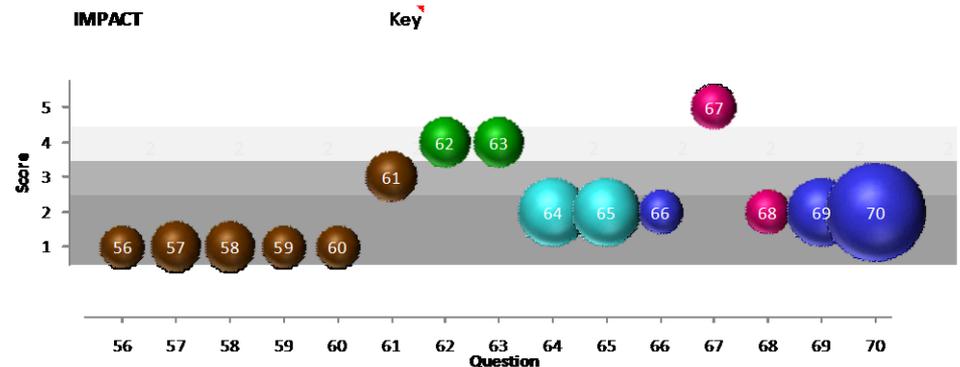
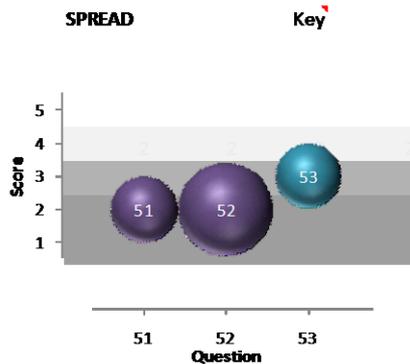
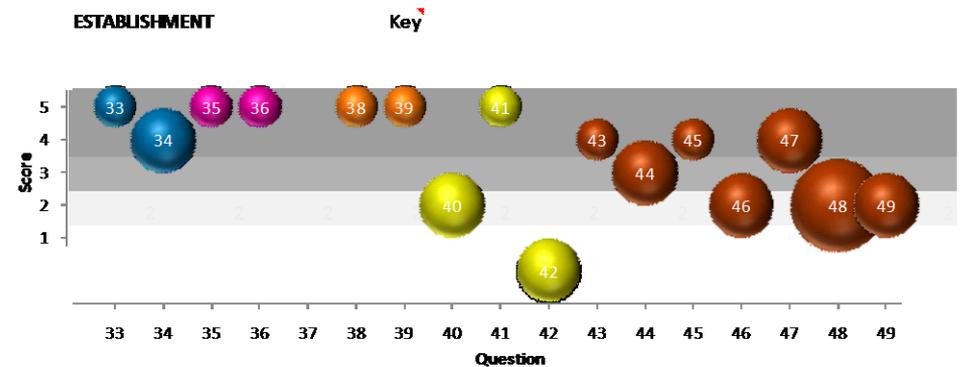
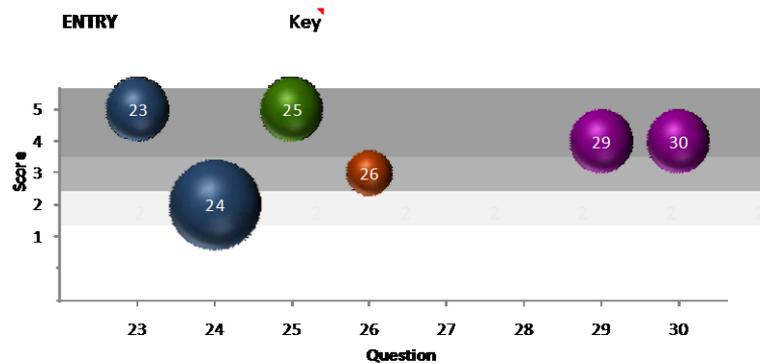
NNRAP - Risk Assessment Visualiser

Dr Adrian Leach, Professor John Mumford and Dr John Holt
Centre for Environmental Policy - Imperial College London

Eagle Owl - Escape from captivity

Visualisation types to show on subsequent sheets:

- Histograms
- Bar with Error
- Error bars only
- Bubbles



Eagle owl risk assessment in Britain

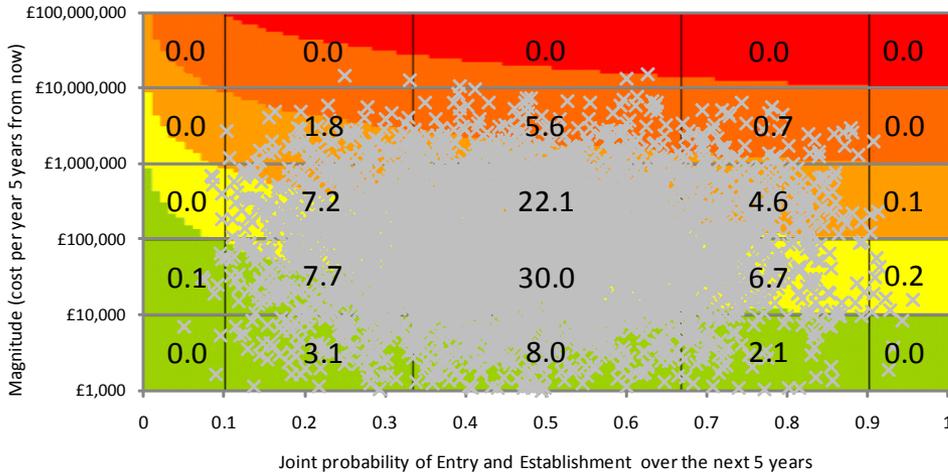
Invasive Risk Impact Simulator

Species: **Eagle Owl 100917**

<i>Subjective assessment by stage</i>				Confidence assessment	Parameters for Beta distribution	
	Assessment	Score			Alpha	Beta
Probability	P entry	Likely	4	Medium	4.50	1.99
	P establishment	Likely	4	Medium	4.50	1.99
Magnitude	Spread	Minor	2	Medium	1.99	4.50
	Impacts	Moderate	3	Medium	5.82	5.82

See Histograms

Probability and Magnitude of Eagle Owl 100917 Risk



X denote cases from 5000 realisations of assessed scores and confidence

Cumulative Distribution of Risk for Eagle Owl 100917 over 5 years

