The costs of New Zealand threatened species programmes

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Introduction

• In 2002, 845 “threatened” NZ species and annual expenditure of NZ$35.8 million.
• NZBS - extra $26.5 million over 5 years, incl. NZ$10 million for kiwi sanctuaries.
• Unclear why some threatened species programmes have high costs.
• Research aim was to improve formal understanding of the costs.
Blue skies research

• Cost function - Swanson’s (1994) model of species extinction and biodiversity loss.
• Annual cost: cost of base natural resources + cost of management services for threats.
• Total cost: stream of annual costs, extant population and recovery rate.
• Survey of the Recovery Group Leaders for 11 NZ threatened species programmes.
PV of annual costs 2003-2012

PV of total annual cost (NZ$ millions)

Threatened species programmes

Beetle
Frog
Daisy
P. patulum
Teal
Snail
Kakapo
Mohua
Bat
Black Stilt
Kokako
Cost versus funding 2003-2012

PV of total annual funding (NZ$ millions)

Threatened species programmes

Beetle  Frog  Daisy  P. patulum  Teal  Snail  Kakapo  Mohua  Bat  Black Stilt  Kokako
Type of threat

PV of total annual cost (NZ$ millions)

Threatened species programmes

Beetle, Frog, Daisy, P. patulum, Teal, Snail, Kakapo, Mohua, Bat, Black Stilt, Kokako
PV of cost per unit 2003-2012

PV of total annual cost / unit (NZ$ millions)

Threatened species programmes

Beetle  Daisy  P. patulum  Teal  Frog  Snail  Kokako  Mohua  Black Stilt  Kakapo  Bat
Projected total costs

Threatened species programmes

Projected total cost (NZ$ millions)
PV of projected total costs

PV of total cost (NZ$ millions)

Threatened species programmes

Beetle, Daisy, P. patulum, Teal, Frog, Flax Snail, Kokako, Mohua, Black Stilt, Kakapo, Bat
Conclusions

• Habitat area and taxon are key factors.
• Other factors - level of existing knowledge?
• A statistically estimated model.
• Include estimates of cost and recovery rate in species recovery plans.
• Cost-effectiveness analysis, funding applications, and the allocation of funding.