

The eradication recipe: how many ingredients are needed?

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The complete eradication of animal pests from New Zealand, as has been recently proposed, is a challenging goal that if it is to be fully realised, requires the development of more effective animal pest control methods, as no current method is 100% effective 100% of the time for any target animal. But how many methods are required, and how effective do they need to be, in order to give confidence that eradication from the New Zealand archipelago can be achieved? Animals that are subject to any control method can avoid, learn, and move (leave or invade) the pest control operational area; if survivors then reproduce, the eradication potential of the control methods may be compromised. One potential solution is to develop highly effective methods that are acute rather than chronic in their impact – i.e. those that act over a short timeframe, rather than over one or more breeding seasons. The simultaneous delivery of a number of quite different but acute methods could be used to overcome the less than 100% kill rates that are a reality of all current methods. This presentation demonstrates an approach that predicts the number of independent but simultaneous methods that could be required to eliminate each small (<10kg) mammalian pest from the New Zealand archipelago. When a sufficient number of methods (i.e. ‘ingredients’) have been developed to a known and consistent level of effectiveness in each habitat type, implementation of such an ambitious goal could be undertaken with a high confidence of success.