Prioritisation of Wildlife Diseases for Surveillance

McKenzie, Joanna
Epicentre, Massey University, Palmerston North, New Zealand

We proposed a methodology and prioritised diseases for a wildlife disease surveillance strategy in New Zealand. The methodology was based on the import risk analysis framework recommended by the Office Internationale des Epizooties (OIE), and involved: hazard identification, risk estimation, and ranking pathogens.

A total of 50 exotic and 36 endemic wildlife pathogens were identified for prioritisation on the basis of their potential to have a serious impact on wildlife, human and or livestock populations in New Zealand. Pathogens were selected by consultation with wildlife disease experts, plus the zoonotic diseases listed for surveillance by the Ministry of Health and the original OIE List A diseases.

A semi-quantitative approach was used to score pathogens for: probability of entry to NZ (release assessment), likelihood of spread (exposure) and consequences in free-living wildlife, captive wildlife, humans, livestock and companion animals. The conservation impacts of pathogens were also scored.

Risk was estimated by multiplying the probability of entry to New Zealand by the likelihood of spread by the consequences for free-living wildlife, humans and livestock. Pathogens were ranked separately within these three major population sectors on the basis of the risk estimate for each sector, which provided an opportunity to identify the priorities within each sector alone. Pathogens were also ranked across all 3 population sectors by summing the risk estimate for each sector. The risk score for humans was doubled in recognition of the more serious concern for disease in humans relative to animal species. Examples of the scoring system and the resulting priority pathogens will be presented.