

Wildlife Investigations and wildlife carers: an introduction to the Australian Wildlife Health Network

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Background

The aim of the Australian Wildlife Health Network is to promote and facilitate collaborative links in the investigation and management of wildlife health in support of human and animal health, biodiversity and trade. Its vision is for a nationally integrated wildlife health system for Australia.

The network is hosted by Taronga Zoo and New South Wales Agriculture (Elizabeth Macarthur Agricultural Institute, PMB 8, Camden, NSW 2570, Australia). It was launched in August 2002 and is funded from a grant from the Wildlife Exotic Disease Preparedness Program (Australian Department of Agriculture, Fisheries and Forestry).¹

The network's core business is wildlife disease surveillance.² It manages a database of wildlife disease surveillance information and an interactive website. It has 280 members from around the country and overseas. Members come from all walks of life. Timely capture and dissemination of surveillance information from practitioners and field workers is a crucial part of surveillance. This paper outlines the network's approach to wildlife surveillance and how wildlife carers can become involved.

Introduction

The AWHN provides expert advice and priorities for wildlife health surveillance activities in Australia (see AWHN revised business plan³ and strategic plan). Targeted wildlife health surveillance is an important activity that the AWHN promotes for funding because knowledge and information about the status of wildlife health is a basic requirement for all management and policy for biodiversity and

¹ The Wildlife Exotic Disease Preparedness Program (WEDPP) is a joint Commonwealth-State/Territory program that commenced in 1984-85. WEDPP's mission is to improve Australia's emergency animal disease preparedness by supporting the Australian Veterinary Emergency Plan (AUSVETPLAN) through the development of strategies and techniques to monitor, prevent, control and eradicate emergency diseases in wildlife and feral animals that threaten Australia's livestock industries.

² Determining which diseases are found in Australian wildlife and monitoring them.

³ Bryant, 2002. Australian Wildlife Health Network revised business plan 2002 – 2005. Prepared for Australian Wildlife Health Network Management Committee 31pp.

conservation work. It is also of central importance for emergency animal disease preparedness and response strategies, education, research and human health issues.

The AWHN does not undertake projects or obtain funds for projects that exclude existing providers. The responsible organisation or successful proponent undertakes surveillance activities. Monies are allocated for surveillance in priority areas from existing WEDPP funds as well as action taken to assist or attract more funds for targeted surveillance. The AWHN coordinates and facilitates this process and promotes projects to potential sponsors through a small expert advisory working group who assists the management committee.

i. Working group

The working group comprises Simon Winter (Animal Health Australia), Chris Bunn (Office of the Chief Veterinary Officer), Glen Saunders (Vertebrate Pest Unit, NSW Agriculture), Pam Whiteley (Wildlife Diseases Association).

ii. Strategic goal

The strategic goal of the AWHN's surveillance activities is to implement improved, increased, effective and efficient wildlife disease surveillance and investigation in Australia to provide baseline knowledge and information about the health status of wildlife populations and risks to agriculture and human health.

iii. Strategic objectives

The strategic objectives of the AWHN's surveillance activities are to:

1. Develop a State/ Territory coordination system for wildlife disease surveillance and reporting, which can also facilitate and monitor field investigations of disease incidents.
2. Provide and operate a national database of wildlife health information, which includes historical disease incident reports.
3. Identify wildlife health surveillance needs and priorities and facilitate funding and action.
4. Provide and operate an interactive Website, which can be used for reporting and accessing Australian wildlife health information.
5. Resources/ funding to achieve objectives

Surveillance activities update

i. General surveillance system

A system of State/ Territory co-ordinators has been put in place to capture and report wildlife disease events and information. Two co-ordinators have been chosen for each State or Territory: a “primary” contact, preferably from a Regional Veterinary Laboratory (to capture “main-stream” diagnostic information), and an “assistant” (to capture “non-mainstream data”) (Table 1).⁴ Co-ordinators report quarterly by

⁴ State and Territory veterinary services have legislative responsibility under the Australian Constitution for animal health services within their respective borders. State services administer relevant acts and regulations involved with livestock identification and movement, disease surveillance, diagnosis, reporting and control of notifiable diseases, chemical residues and other programs. This requires the maintenance of close links with livestock producers, private veterinarians and others associated with the

teleconference, or on an “as needs” basis. Data submission is by standard pro forma. Information is moderated and entered on a purpose built database. Reports are generated quarterly for Animal Health Surveillance Quarterly, Wildlife Diseases Association, National Enteric Pathogen Surveillance Scheme, the World Conservation Union Species Survival Commission Veterinary Specialists Group and the AWHN.

Reports are produced yearly for the Office International des Epizooties and Animal Health in Australia.⁵

Six disease categories form the basis for general surveillance and include: 1) OIE list diseases; 2) bat viral diseases; 3) mass, or unusual mortality events; 4) Salmonella cases; 5) Arbovirus cases; 6) diseases State/ Territory co-ordinators think are interesting or unusual.⁶

ii. Targeted surveillance

The network is involved with a number of targeted wildlife surveillance projects. The majority of these projects are at a developmental stage.

Frawley Report Surveillance Steering Committee - The network is a member of the recently formed steering committee established to deal with those aspects of the Frawley Review that address animal disease surveillance.

On 12 June 2003, Animal Health Committee (AHC) supported in principle the recommendations of the Frawley Review particularly those requiring Primary Industries Ministerial Council (PIMC)/ Primary Industries Standing Committee (PISC) action, and proposed implementation strategies for consideration by PISC.

In essence, there are three major initiatives that have been entrusted by PIMC to be delivered by animal health authorities, the livestock industries and the veterinary profession. These are

- 1.Improving the national surveillance system
- 2.Integrating non-government veterinarians (NGVs) into the national surveillance system and into emergency animal disease (EAD) activities
- 3.Strategic utilisation of diagnostic laboratory facilities

livestock industries. An animal health administrative unit headed by the State/ Territory Chief Veterinary Officer carries out these tasks.

⁵ Animal Health Surveillance is the quarterly newsletter of Australia’s national animal health information system (the NAHIS). The NAHIS aggregates summary data and provides information from a number of sources about Australia’s animal health status. Its aim is to provide timely and accurate summary information on Australia’s animal health status. The Office International des Epizooties (OIE: World Animal Health Organisation) is an intergovernmental organisation made up of 162 member countries. Each Member Country undertakes to report the animal diseases that it detects on its territory. The OIE then disseminates the information to other countries, which can take the necessary preventive action. This information also includes diseases transmissible to humans. Information is sent out immediately or periodically depending on the seriousness of the disease. It is somewhat analogous to the WHO.

⁶ Salmonella reports are linked into the National Enteric Pathogen Surveillance Scheme (NEPSS). The aim of NEPSS is to reduce the burden of human disease due to enteric pathogens, by collecting, analysing and disseminating data on diagnoses of enteric food and water borne infections of public health importance.

The Review made several recommendations for improving the national surveillance system, integrating non-government veterinarians (NGVs) into national surveillance and animal disease emergency activities and for a more strategic and national approach to the location and utilisation of diagnostic facilities.

At the October AHC meeting, members supported a proposal to establish three steering committees to take these tasks forward. The Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) has agreed to the proposal.

The Surveillance Steering Committee is Chaired by Mike Nunn (Office of the Chief Veterinary Officer, Australian Department of Agriculture, Fisheries and Forestry) and consists of: Simon Winter (Animal Health Australia), Patricia Ellis (Australian Veterinary Association), Hugh Millar and Peter Buckman (Animal Health Committee), Richard Whittington (University of Sydney/Bio-security CRC), Moira McKinnon (Chair, Communicable Diseases Network of Australia), Vivien Kite (Australian Chicken Meat Federation Inc), John Stewart (Cattle Council of Australia), Bill Hall (Australian Pork Limited) and the Coordinator, Australian Wildlife Health Network.

Wildlife plays a central role in many of the diseases that impact on Australia's trade, agro-economy, human health and biodiversity. It is important that wildlife surveillance activities are approached and integrated with production animal, and human health activities. The network is currently working with Jane Bennett (Strategic Planning) in developing terms of reference for a project aimed at auditing wildlife surveillance activities and prioritising future work.

Australian Biosecurity CRC – The network has applied for funding from the Australian Biosecurity CRC for funding to complement and facilitate the activities of the Frawley Report. The purpose of this project is to develop improved surveillance systems for the detection of emerging and exotic diseases of wildlife that threaten human health, agricultural production, trade and biodiversity in Australia.

It aims to investigate current shortfalls in capacity, capability and knowledge in the area of disease risks that involve wildlife and identify strategies for a proactive and long-term approach to wildlife disease surveillance in Australia.

The project addresses National Research Priority, Safeguarding Australia Goal 3 Protecting Australia from invasive diseases and pests: Counteract the impact of invasive species through the application of new technologies and by integrating approaches across agencies and jurisdictions.

There are two parts to the study: A) Determine which diseases that involve Australian wildlife may require a surveillance program. From this: B) Develop a pathway to adoption for wildlife disease surveillance activities within Australia. A decision on funding is pending.

Australian Bat Lyssavirus and bat viral diseases – The network has now taken over management of Australian Bat Lyssavirus surveillance data for the NAHIS. It also

records information on other bat viral diseases such as Nipah, Hendra and Menangle viruses.

Chytridiomycosis mapping project – The network is part of the team developing the Threat Abatement Plan for Chytridiomycosis (caused by the amphibian chytrid fungus) in Australian frogs. It is currently working on a project that designs and trials a pilot survey to map the distribution of chytrid in Australian frogs.

West Nile virus – The network is currently working with Rob Williams and Peter Black (Disease Preparedness section of the Office of the Australian Chief Veterinary Officer, DAFF) examining the elements of an effective West Nile Virus surveillance system in Australia in wild bird populations to detect an incursion of this exotic organism. The purpose of the project is to design a surveillance system for detecting an incursion of WNV in wild birds, taking into account existing systems for Flavivirus surveillance, and sample/data collection from both sentinel and wild animal populations. This will involve analysis of some current Flavivirus surveillance activities both in Australia and overseas, as well as recommendations for enhanced surveillance for WNV and potentially other emerging diseases in Australia.

Avian Influenza – The network is working closely with the WEDPP in examining the role of wild bird surveillance in avian influenza preparedness in Australia.

Tasmanian Devil Facial Tumour Syndrome – The network has assisted with funding for development of a case definition for the Tasmanian Devil Facial Tumour Syndrome currently affecting wild Tasmanian Devils. Development of a case definition is an important precursor to targeted surveillance.

iii. Database and website

Database - One of the strategic goals of the AWHN is to provide and operate a national database of wildlife health information, which includes historical disease incident reports. Development of the database has been contracted to Paul Prosee Database Development, a New Zealand based company with experience in designing, building and servicing databases that manage wildlife disease information. Key elements of the database include the ability to produce monitoring and surveillance reports, linkages with the Australian Registry of Wildlife Health database, and compatibility with the National Animal Health Information System (NAHIS). The database is modeled upon that currently being used by the Australian Registry of Wildlife Health.

The database is currently undergoing conversion to a web-based format. This will allow multiple user data access and entry in close to real time.

Website - One of the strategic goals of the AWHN is to provide and operate an interactive Website, which can be used for reporting and accessing Australian wildlife health information. Key elements of the website include linkages with the many AWHN core members, surveillance and expertise databases, a bulletin board, list server and fact sheets. It also contains the wildlife surveillance, literature, research and membership databases. The website is the public face of the AWHN and offers

solutions for those looking for information or contacts to assist them with management of wildlife health in Australia.

The website data load will take an estimated 18 months (primarily fact sheets and surveillance data). Management will then be on-going. Initial management will require significant IT and time commitment. Further development will include a dedicated Wildlife Exotic Disease Preparedness Program part of the site.

The Role of wildlife carers

Wildlife carers have two roles to play in investigations:

1) Alert and reporting

Rapid detection and information transfer is crucial in managing disease incidents. carers are encouraged to report wildlife incidents in the above six categories to their local veterinarian, and through them to their State or Territory co-ordinator (Table 1), or the National co-ordinator (above).

2) Investigation and diagnosis

The network has a small amount of funding allocated for supporting wildlife disease investigations. Emphasis is on those diseases that fall into one of the six categories previously outlined for general surveillance. Investigation of mass mortality events in birds should include exclusion of WNV and AI screening. Continued screening of bats for ABL should also occur. To apply for funding, please contact you State or Territory co-ordinator (Table 1), or the National co-ordinator (above). Investigation follows first principles, however a useful guide outlining an approach to disease investigation, diagnostic procedures, post mortem examination, outbreak investigation and data collection is contained in Rose, K. 2002. Wildlife Health Investigation Manual. Australian Registry of Wildlife Health, Sydney, NSW, Australia 41pp (contact kroese@zoo.nsw.gov.au).

Future priorities

As the recommendations of the Frawley Report Surveillance Steering Committee are produced there is likely to be an increasing role for carers in targeted wildlife surveillance. The network will continue to drive this process and keep carers updated. Formation of a National body to represent carers would facilitate this process. Other future priorities include event definition, contingency planning and wildlife incident investigation training.

Acknowledgements

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Table 1. Contact details for AWHN State and Territory co-ordinators.

State or Territory	Co-ordinators	Notes	Address	Contact details
ACT	Primary contact Murray Evans	Senior Wildlife Ecologist	Environment ACT PO Box 144, Lyneham, ACT 2602	murray.evans@act.gov.au W: 02 6207 2118 Fax: 02 6207 2122
WA	Primary contact Cleve Main	Government rep/ pathologist	Animal Health Laboratory Agriculture WA Locked Bag 4 Bentley Delivery Service WA 6983	cmain@agric.wa.gov.au W: 08 9368 3426 Fax: 08 9474 1881
	Assistant Shane Raidal	Murdoch University Pathologists, Avian medicine and husbandry	Division of Veterinary and Biomedical Sciences Murdoch University South Street Murdoch WA	Raidal@numbat.murdoch.edu.au W: 08 9360 2418 Fax: 08 9310 4144
TAS	Primary contact Robyn Sharpe	Government rep/ pathologist	Dept Primary Industry, Water and Environment Animal Health Laboratory PO Box 46 Kings Meadows Launceston TAS 7249	Robyn.sharpe@dpiwe.tas.gov.au W: (03) 6336 5456 H: (03) 6344 6247
	Assistant Patsy Davies	Government wildlife co- ordinator Tasmania	Dept Primary Industry, Water and Environment Nature Conservation Branch GPO Box 44 Hobart, TAS 7001	Patsy.davies@dpiwe.tas.gov.au W: (03) 6233 6299
QLD	Primary contact Hume Field	Government rep Wildlife epidemiologist	QLD Dept Primary Industries Animal Research Institute LMB 4 Moorooka QLD 4105	Hume.Field@dpi.qld.gov.au W: 07 3362 9566 H: 07 3821 6072 Fax: 07 3362 9457 M: 0412 377 820
	Assistant Vere Nicholson	Currumbin/ WDA rep for QLD	Senior Veterinarian Currumbin Sanctuary 28 Tomewin Street Currumbin QLD 4223	Vere.nicolson@optusnet.com.au W: (07) 5534 0833 H: 07 5522 6420
VIC	Primary contact Peter Holz	Healesville	Veterinarian Healesville Sanctuary PO Box 248 Healesville VIC 3777	pholz@zoo.org.au W: 03 5957 2835 Fax: 03 5957 2860 M: 0418 588 362
SA	Primary contact Sue Bigwood	Monarto Zoo/ WDA rep for SA	55 Anderson Avenue Bridgewater SA 5155	andrewb@health.on.net H: 08 8339 2320 M: 0438 877 493
	Assistant Lisa Farroway	Government rep/ kangaroo ecologist	Ecologist – Kangaroo Management NPWSA 1 Richmond Road PO Box 1047 Adelaide SA 5001	Farroway.lisa@saugov.sa.gov.au W: 08 8124 4855 Fax: 08 8124 4789
NT	Primary contact Cathy Shilton	Government rep	Dept of Business, Industry and Resource Development Berrimah Vet Laboratories GPO Box 3000 Darwin, NT 0801	Cathy.shilton@nt.gov.au W: 08 8999 2227 Fax: 08 8999 2024
NSW	Primary contact Ian Lugton	Government rep	Senior Veterinary Officer Animal Welfare Unit, NSW Agriculture 161 Kite St, ORANGE NSW 2800	ian.lugton@agric.nsw.gov.au W: 02 63 913688 Fax: 02 63 913570
	Assistant Karrie Rose	Australian Registry of Wildlife Health	Taronga Zoo Veterinary and Quarantine Centre PO Box 20 Mosman NSW 2088	krose@zoo.nsw.gov.au W: 02 9978 4749 Fax: 02 9978 4516 M: 0402 553 537

Australian Antarctic Territory	Primary contact Colin Southwell	Government rep	Australian Antarctic Division Channel Highway Kingston TAS 7050	Colin.southwell@aad.gov.au W: (03) 6232 3450 (Hobart) (02) 6251 4689 (Canberra) Fax: (03) 6232 3351 Mobile: 0407 768 085
	Assistant Martin Riddle	Government rep	Program Leader Human Impacts Research Program Australian Antarctic Division Channel Highway Kingston TAS 7050	Martin.riddle@aad.gov.au W: (03) 6232 3573 Fax: (03) 6232 3351