



9 September 2016

Dr Alan Finkel AO, Chief Scientist
Expert Working Group

Dear Dr Finkel,

**WILDLIFE HEALTH AUSTRALIA (WHA) SUBMISSION: NATIONAL RESEARCH INFRASTRUCTURE
CAPABILITY ISSUES PAPER**

Please find attached a submission to the Panel regarding feral animals, native wildlife and disease and the National Research Infrastructure Capability Issues Paper. We have structured our submission to provide feedback to the specific questions raised in the Working Group's issues paper: "National Research Infrastructure Capability Issues Paper". We also provide background information for the Working Group on Australia's peak body for wildlife health, Wildlife Health Australia (WHA).

It is encouraging to see biosecurity included under "National Security" and the inclusion of "Environment and natural resource management". However, agriculture and food security seems to be missing from the capabilities list that includes Health and Environment. Australia's wildlife health system and its animal trade and market access is underpinned by a rapid and responsive diagnostic system. Investment in a national, "linked-up" framework to support the identification, prioritisation and investigation of animal health research and diagnostic needs is vital for Australia's future prosperity. We would encourage the Working Group to consider this as an essential part of Australia's future research infrastructure needs.

We are happy to discuss this submission with you face to face should you feel it would assist the Panel. We hope that our submission helps you with this important work.

Best Wishes,

Rupert Woods AM
CEO, WHA

Submission Template

2016 National Research Infrastructure Roadmap

Capability Issues Paper

Name	Rupert Woods
Title/role	CEO
Organisation	Wildlife Health Australia Inc.

Questions

Question 1: Are there other capability areas that should be considered?

Yes.

A framework is required to support national research priorities in the animal health investigation and diagnostics area. Australia has very good diagnostic capability but there is a requirement for networks and a “joined up” approach to retain diagnostic linkages. Australia’s animal trade and market access is underpinned by a rapid and responsive diagnostic system. Investment in a national framework to support the identification, prioritisation and investigation of animal health research and diagnostic needs is vital for Australia’s future prosperity. (See also Q15.)

It is encouraging to see biosecurity included under “National Security” and the inclusion of “Environment and natural resource management”. However, agriculture and food security seems to be missing from the capabilities list that includes Health and Environment. Integration and interactions between Health, Agriculture and Environment as “One Health” with a research framework to manage the associated complexity and uncertainty is also missing. Environment considerations appear to be limited to a utilitarian perspective.

Question 2: Are these governance characteristics appropriate and are there other factors that should be considered for optimal governance for national research infrastructure.

Conflict of interest should be considered as a key factor in decision making around governance models. Regardless of the final model adopted, there should be recognition and understanding of the importance of the principles of good governance and ethical decision making.

Question 3: Should national research infrastructure investment assist with access to international facilities?

See Q31 – below.

Question 8: What principles should be applied for access to national research infrastructure, and are there situations when these should not apply?

The principles: “transparent and equitable while maintaining priority for the very best research, in the national interest” are a good foundation.

Question 10: What financing models should the Government consider to support investment in national research infrastructure?

Wildlife Health Australia (WHA) supports the National Innovation and Science Agenda, providing ongoing operational funding for the existing National Collaborative Research Infrastructure Strategy (NCRIS) network and funding over the mentioned ten-year timeframe. On-going support for research would fit “Future” and “National Lotteries”-funding models. To avoid conflict of interest, national framework development requires Australian government support. These models can be levered with other Australian governments, Industries and stakeholders, but the leadership and responsibility for the framework needs to sit with the Australian government.

Question 14: Are there alternative financing options, including international models that the Government could consider to support investment in national research infrastructure?

For wildlife health and disease, the public-private partnership model developed by Canada as the Canadian Wildlife Health Cooperative could be considered as part of the suit of options for funding future wildlife health research infrastructure.

Health and Medical Sciences

Question 15: Are the identified emerging directions and research infrastructure capabilities for Health and Medical Sciences right? Are there any missing or additional needed?

The majority of emerging diseases arise from wildlife (e.g. SARS, Nipah virus). Wildlife Health Australia agrees that there is a growing need in Australia for timely recognition of disease outbreaks and associated pathogens of public health concern, and supports the need for further investment in national infrastructure linking state and federal disease control agencies with researchers and reference laboratories. If linked to appropriate computational power and bioinformatics expertise, this investment will greatly improve research outcomes and translation into countermeasures and public health policy.

Wildlife Health Australia strongly supports the statement that: “There is a growing need in Australia for timely recognition of disease outbreaks and associated pathogens of public health concern. While there has been some population based systems development, further investment in national infrastructure linking state and federal disease control agencies with researchers and reference laboratories is highly desirable. If linked to appropriate computational power and bioinformatics expertise, this investment will greatly improve research outcomes and translation into countermeasures and public health policy.” See also initial comments Q1.

Question 16: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Australia needs to monitor the development of the World Organisation for Animal Health (OIE) Collaborating Centres in the wildlife health area. These centres have an

important role in providing a coordination, investigation and research framework for global wildlife diseases. It is important that Australia not be “left behind” in this area.

Question 17: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Health and Medical Sciences capability area?

The importance of emerging diseases to Australia’s human health and our ability to identify, treat and research them. With climate change, increased international travel and changing land use, the risks will only increase.

Environment and Natural Resource Management

Question 18: Are the identified emerging directions and research infrastructure capabilities for Environment and Natural Resource Management right? Are there any missing or additional needed?

The importance of wildlife as reservoirs for emerging diseases that can impact upon Australia’s biodiversity (e.g. chytridiomycosis, Tasmanian Devil Facial Tumour) and the increasing interest in wild animal health in Australia’s Antarctic Territory (AAT) needs to be recognised and considered in identifying future needs. Research frameworks that enable the early identification, assessment and mitigation of risks posed by disease of wildlife to Australia, and AAT are required.

The usefulness of wildlife health and disease as indicators of broader environmental health and how this might be operationalised in the context of broader ecosystem health monitoring needs to be considered.

Question 19: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

A priority for Australia is the extension of the existing IMOS further south to give a sustainable observing system for the monitoring of important environments in and around AAT. Though a framework to support research development and prioritization to manage wildlife health risks to AAT is needed, the health of Australia’s wildlife is dependent upon healthy ecosystems.

Question 20: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Environment and Natural Resource Management capability area?

The environment space is complex and fragmented. The need to invest in coordinating frameworks should be considered to be mission critical to any long term strategy. This will require significant investment over a time frame that should be measured in decades rather than years. More than any other space, the public good aspects of this work need to be recognised and funding flows appropriately identified and resourced. A number of nationally agreed priority documents are available, but their operationalisation has been hampered by the lack of an enabling research infrastructure framework and an inability to identify commercial end-users

who might be willing to fund activities. With an appropriate governance framework, the recently proposed Ecosystem Science Council and Centre for Invasive Species Solutions could assist in national coordination but without an agreed (and sustainable) enabling research framework to prioritise and focus activities, these initiatives will be unable to fully realise their potential.

From a wildlife disease perspective, there is considerable capability latent with Australia's University System. What is lacking is investment in coordination to provide the necessary framework to focus activities in the longer term national interest. Successful research groups can be consolidated to improve research outcomes.

National Security

Question 27: Are the identified emerging directions and research infrastructure capabilities for National Security right? Are there any missing or additional needed?

CSIRO AAHL's role, and the role of other Australian animal health laboratories, in emergency animal disease (EAD) diagnosis, surveillance and response as well as in emerging diseases and the potential for integrating into national surveillance activities is poorly understood. These laboratories form part of a sophisticated and complex laboratory diagnostic network, which is important for the future protection of Australia. There is a need for greater linkage and coordination of activities between these laboratories. A "linked-up" system, will not only help manage new and emerging disease risks from wildlife, but support biosecurity and human health in general.

See also Q31 below.

Question 29: Is there anything else that needs to be included or considered in the 2016 Roadmap for the National Security capability area?

Almost every significant human and animal disease has wildlife as part of its ecology (e.g. Q fever, tularaemia, foot and mouth disease). The importance of wildlife to emerging disease risks to Australia's human and animal health and our ability to identify, assess and deploy countermeasures in this space is missing. With climate change, increased international travel and changing land use, the risks (be they pre- or post-border) will only increase. Wildlife health risks, as part of bigger animal health risks to national security, need to be included in considering future infrastructure capabilities for Australia. The CSIRO Australian Animal Health Laboratory, and some other Australian laboratories are well placed to assist but would require additional resources to do so.

Underpinning Research Infrastructure

Question 30: Are the identified emerging directions and research infrastructure capabilities for Underpinning Research Infrastructure right? Are there any missing or additional needed?

Explicit recognition of the need to invest in long term, sustainable, coordinating frameworks is missing. This is mission critical.

Question 31: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Australia's role in newly forming global laboratory networks – for example, CSIRO AAHL was invited to participate in a successful EU bid to establish a global network between the major European biomedical laboratories to provide ready access to emerging viral isolates and reagents (EVAG network).

Another example is a newly established and funded BSL4 Zoonotic Laboratory network (BSL4ZNet) funded by the Canadian Department of Defence that links CSIRO AAHL with US (CDC, Department of Homeland Security, and USDA), Canada (Public Health Canada and Canadian Food Inspection Agency), UK (Pirbright and Public Health England), and the German FLI lab in Riems. This network was invitation only and required that member countries had a national BSL4 lab and is establishing a formal network through which member countries can leverage the network to achieve information exchange, increase science funding and collaboration, train and develop a specialised global BSL4 workforce, share otherwise confidential information and intelligence, and organise global support for disease outbreaks and emergencies.

A concept proposal to establish a VetLab Bio network comprised of most EC veterinary laboratories with select global partners is being considered for EC funding.

Australia can potentially benefit by CSIRO AAHL being part of all of these networks – we would not be invited to join if the country did not have CSIRO AAHL. Membership in these types of networks benefits Australia's biosecurity and human health mission spaces.

Data for Research and Discoverability

Question 33 Are the identified emerging directions and research infrastructure capabilities for Data for Research and Discoverability right? Are there any missing or additional needed?

Recognition of the need for a mechanism to identify and fund "public good" activities that cannot currently be levered with Industry or other stakeholders, but may still be in the National Interest is also missing. This is the formal, analysis and foresighting framework required to identify risks and research priorities required to

better articulate, communicate and prioritise activities designed to mitigate against risk.

Question 35: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Data for Research and Discoverability capability area?

Recognition and support for collection of data not specifically aimed at research, but that can provide a significant contribution to understanding of risk for Australia. For example, animal surveillance data. These data need to be processed and managed in the National Interest. The Australian Government Department of Agriculture and Water Resources Data Warehouse is an important initiative that needs to be supported.

Other comments

If you believe that there are issues not addressed in this Issues Paper or the associated questions, please provide your comments under this heading noting the overall 20 page limit of submissions.

The risk posed to Australia, its trade, human health and biodiversity by diseases with wildlife as part of their ecology, and the role wildlife health could play in ecosystem monitoring. An understanding of the inclusion of “wildlife” as part of “animal” and “ecosystem”-based activities may be implicit. However, our experience has been that, because of its broad impact on many areas, the risks need to be made explicit lest they are forgotten, assumed or “fall through the cracks” of our (otherwise very good) national systems.

International links are important as we are not isolated and science development and wisdom progress best by working with others. This is especially important in the wildlife area given Australia’s geographic location with respect to south-east Asia.

WHA supports initiatives that are in the national interest and encourages our leaders and decision makers to remember the risks posed to Australia by this small, but important area in future framework development. WHA’s mission assists, and is assisted by, research frameworks that support our biosecurity, human and animal health.

ABOUT WILDLIFE HEALTH AUSTRALIA

Wildlife Health Australia (WHA) is the peak body for wildlife health in Australia and operates nationally. The head office is located in Sydney, NSW.

WHA activities focus on the increasing risk of emergency and emerging diseases that can spill over from wild animals and impact on Australia's trade, human health, biodiversity and tourism. We provide a framework that allows Australia to better identify, assess, articulate and manage these risks. We provide the framework for Australia's general wildlife health surveillance system.

Our mission is to develop strong partnerships in order to better manage the adverse effects of wildlife diseases on Australia's animal health industries, human health, biodiversity, trade and tourism.

WHA directly supports the Animal Health Committee (AHC), Animal Health Australia (AHA), the Animal Health Policy Branch and the Office of the Chief Veterinary Officer (OCVO) within the Australian Government Department of Agriculture and Water Resources (DAWR) and Australian governments in their efforts to better prepare and protect Australia against the adverse effects of wildlife diseases. It provides priorities in wildlife disease work, administers Australia's general wildlife disease surveillance system as well as facilitating and coordinating targeted projects. Wildlife health intelligence collected through the National Wildlife Health Information System (eWHIS: <http://www.wildlifehealthaustralia.com.au>) administered by WHA is provided to members of AHC and the Australian Government DAWR, and Departments of Health (DoH) and Environment (DoE), on issues of potential national interest, potential emerging issues and significant disease outbreaks in wildlife. The information is provided in line with the agreed policy for data security. WHA supports the NAHIS by provision of quarterly reporting and the ACVO by hosting the OIE Wildlife Health Focal Point.

WHA is administered under good organisational governance principles. An elected management group, chaired by an appointment from DAWR, and including an AHCV representative provides strategic direction and advice to a small team, which oversees the running of WHA. It is important to note that WHA involves almost every agency or organisation (both government and NGO) that has a stake or interest in animal and wildlife health issues in Australia. There are over 35 member organisations and more than 600 wildlife health professionals and others from around Australia and the rest of the world who have an interest in diseases with feral animals or wildlife as part of their ecology that may impact on Australia's trade, human health and biodiversity.

More information on WHA is available at: <http://www.wildlifehealthaustralia.com.au>.