AUSTRALIAN VETERINARY EMERGENCY PLAN

AUSVETPLAN

Disease strategy

African swine fever

Version 4.1

AUSVETPLAN is a series of technical response plans that describe the proposed Australian approach to an emergency animal disease incident. The documents provide guidance based on sound analysis, linking policy, strategies, implementation, coordination and emergency-management plans.

National Biosecurity Committee
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td>1.1</td>
<td>Scope of this manual</td>
<td>6</td>
</tr>
<tr>
<td>1.2</td>
<td>Structure of AUIVERPLAN</td>
<td>6</td>
</tr>
<tr>
<td>1.3</td>
<td>Nationally agreed standard operating procedures</td>
<td>7</td>
</tr>
<tr>
<td>1.4</td>
<td>World Organisation for Animal Health listing</td>
<td>8</td>
</tr>
<tr>
<td>1.5</td>
<td>Australian emergency animal disease listing</td>
<td>8</td>
</tr>
<tr>
<td>1.6</td>
<td>Manner and risk of introduction to Australia</td>
<td>8</td>
</tr>
<tr>
<td>1.7</td>
<td>Social and economic effects</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Nature of the disease</td>
<td>10</td>
</tr>
<tr>
<td>2.1</td>
<td>Aetiology and pathogenicity</td>
<td>10</td>
</tr>
<tr>
<td>2.2</td>
<td>Susceptible species</td>
<td>10</td>
</tr>
<tr>
<td>2.3</td>
<td>World distribution and occurrence in Australia</td>
<td>10</td>
</tr>
<tr>
<td>2.3.1</td>
<td>World distribution</td>
<td>10</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Occurrence in Australia</td>
<td>11</td>
</tr>
<tr>
<td>2.4</td>
<td>Epidemiology</td>
<td>11</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Incubation period</td>
<td>11</td>
</tr>
<tr>
<td>2.4.2</td>
<td>Persistence of agent and modes of transmission</td>
<td>11</td>
</tr>
<tr>
<td>2.5</td>
<td>Diagnostic criteria</td>
<td>14</td>
</tr>
<tr>
<td>2.5.1</td>
<td>Case definition</td>
<td>14</td>
</tr>
<tr>
<td>2.5.2</td>
<td>Clinical signs</td>
<td>14</td>
</tr>
<tr>
<td>2.5.3</td>
<td>Pathology</td>
<td>15</td>
</tr>
<tr>
<td>2.5.4</td>
<td>Differential diagnosis</td>
<td>16</td>
</tr>
<tr>
<td>2.5.5</td>
<td>Laboratory tests</td>
<td>16</td>
</tr>
<tr>
<td>2.6</td>
<td>Resistance and immunity</td>
<td>19</td>
</tr>
<tr>
<td>2.6.1</td>
<td>Innate immunity</td>
<td>19</td>
</tr>
<tr>
<td>2.6.2</td>
<td>Acquired immunity</td>
<td>19</td>
</tr>
<tr>
<td>2.7</td>
<td>Vaccination and/or treatment of infected animals</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Principles of control and eradication</td>
<td>21</td>
</tr>
<tr>
<td>3.1</td>
<td>Critical factors for formulating response policy</td>
<td>21</td>
</tr>
<tr>
<td>3.1.1</td>
<td>Features of the disease</td>
<td>21</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Features of susceptible populations</td>
<td>21</td>
</tr>
<tr>
<td>3.2</td>
<td>Options for control and eradication based on the critical factors</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>Policy and rationale</td>
<td>23</td>
</tr>
<tr>
<td>4.1</td>
<td>Introduction</td>
<td>23</td>
</tr>
<tr>
<td>4.1.1</td>
<td>Summary of policy</td>
<td>23</td>
</tr>
<tr>
<td>4.1.2</td>
<td>Case definition</td>
<td>24</td>
</tr>
<tr>
<td>4.1.3</td>
<td>Cost-sharing arrangement</td>
<td>24</td>
</tr>
<tr>
<td>4.1.4</td>
<td>Criteria for proof of freedom</td>
<td>24</td>
</tr>
<tr>
<td>4.1.5</td>
<td>Governance</td>
<td>24</td>
</tr>
<tr>
<td>4.2</td>
<td>Public health implications</td>
<td>25</td>
</tr>
<tr>
<td>4.3</td>
<td>Control and eradication policy</td>
<td>25</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Stamping out</td>
<td>25</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Quarantine and movement controls</td>
<td>26</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Tracing and surveillance</td>
<td>27</td>
</tr>
</tbody>
</table>
4.3.4 Zoning and compartmentalisation for international trade ........................................ 28
4.3.5 Vaccination .................................................................................................................. 28
4.3.6 Treatment of infected animals .................................................................................... 28
4.3.7 Treatment of animal products and byproducts ............................................................ 29
4.3.8 Disposal of animals, and animal products and byproducts ......................................... 29
4.3.9 Decontamination ........................................................................................................ 29
4.3.10 Wild animal control .................................................................................................. 29
4.3.11 Vector control ............................................................................................................ 30
4.3.12 Public awareness and media ...................................................................................... 30
4.4 Other strategies .............................................................................................................. 30
4.5 Funding and compensation ............................................................................................ 31
4.5.1 General considerations ............................................................................................... 31
5 Guidelines for classifying declared areas and premises .................................................... 32
5.1 Declared areas ................................................................................................................ 32
5.1.1 Transmission area (TA) ............................................................................................. 32
5.1.2 Restricted area (RA) .................................................................................................. 32
5.1.3 Control area (CA) ...................................................................................................... 33
5.1.4 Outside area (OA) ...................................................................................................... 33
5.1.5 Other types of areas ................................................................................................... 33
5.2 Declared premises .......................................................................................................... 33
5.2.1 Infected premises (IP) ................................................................................................ 34
5.2.2 Suspect premises (SP) .............................................................................................. 34
5.2.3 Trace premises (TP) .................................................................................................. 35
5.2.4 Dangerous contact premises (DCP) ............................................................................. 35
5.2.5 Dangerous contact processing facility (DCPF) .......................................................... 36
5.2.6 Approved processing facility (APF) .......................................................................... 37
5.2.7 At-risk premises (ARP) ............................................................................................. 37
5.2.8 Premises of relevance (POR) ..................................................................................... 37
5.2.9 Resolved premises (RP) ............................................................................................ 37
5.2.10 Unknown status premises (UP) ................................................................................ 37
5.2.11 Zero susceptible species premises (ZP) .................................................................... 38
5.2.12 Qualifiers ................................................................................................................ 38
5.3 Guidelines for reclassifying previously declared areas .................................................. 39
6 Quarantine and movement controls .................................................................................. 41
6.1 General principles .......................................................................................................... 41
6.2 Guidelines for issuing permits ...................................................................................... 41
6.3 Types of permits ............................................................................................................ 42
6.3.1 General permit .......................................................................................................... 42
6.3.2 Special permit ............................................................................................................ 42
6.4 Recommended quarantine practices and movement controls ....................................... 43
6.4.1 Live susceptible animals ............................................................................................ 43
6.4.2 Semen and embryos from live susceptible animals ..................................................... 45
6.4.3 Meat and meat products ............................................................................................ 46
6.4.4 Waste products and effluent ..................................................................................... 47
6.4.5 Empty livestock transport vehicles and associated equipment .................................. 48
6.4.6 People and nonsusceptible animals .......................................................................... 49
6.4.7 Crops, grains, hay, silage and mixed feeds ................................................................. 49
7 Procedures for surveillance and proof of freedom ............................................................ 51
8 Glossary ............................................................................................................................ 53
8.1 Disease-specific terms ........................................................................................................ 53
8.2 Standard AUSVETPLAN terms .......................................................................................... 53

9 Abbreviations .......................................................................................................................... 62
9.1 Disease-specific abbreviations ............................................................................................. 62
9.2 Standard AUSVETPLAN abbreviations ................................................................................. 62

10 References ........................................................................................................................................ 64
10.1 Further reading ....................................................................................................................... 65
10.2 Training resources .................................................................................................................. 65

Tables

Table 1.1 AUSVETPLAN documents ................................................................................................. 7
Table 2.1 Laboratory tests currently available at CSIRO-AAHL for the diagnosis of African swine fever 19
Table 6.1 Recommended movements controls for live pigs ................................................................. 44
Table 6.2 Recommended movement controls for pig semen ......................................................... 45
Table 6.3 Recommended movement controls for fresh/frozen pigmeat and offal ......................... 47
Table 6.4 Recommended movement controls for waste products and effluent, including offal not for human consumption ........................................................................................................... 48

Figures

Figure 2.1 The current approach to diagnostic testing at CSIRO-AAHL .................................................. 18
1 Introduction

1.1 Scope of this manual

This disease strategy for the management of an outbreak of African swine fever (ASF) in Australia is an integral part of the Australian Veterinary Emergency Plan, or AUSVETPLAN (Edition 4). AUSVETPLAN structures and functions are described in the AUSVETPLAN Overview Document (in preparation). The disease strategy provides information about the disease (Section 2); the relevant risk factors and their treatment, and the options for management of a disease outbreak, depending on the circumstances (Section 3); the starting policy and guidelines for agencies and organisations involved in a response to an outbreak (Section 4); declared areas and premises (Section 5); quarantine and movement controls (Section 6); and how to establish proof of freedom (Section 7). The key features of ASF are described in the ASF Fact Sheet — under development.

This manual has been produced in accordance with the procedures described in the AUSVETPLAN Overview Document (in preparation), and in consultation with Australian national, state and territory governments; the relevant livestock industries; nongovernment agencies; and public health authorities, where relevant.

In this manual, text placed in square brackets [xxx] indicates that that aspect of the manual remains contentious or is under development; such text is not part of the official manual. The issues will be worked on by experts and relevant text included at a future date.

1.2 Structure of AUSVETPLAN

Guidelines for the field implementation of AUSVETPLAN are contained in the disease strategies, response policy briefs, operational manuals and management manuals. Industry-specific information is given in the relevant enterprise manuals. The full list of AUSVETPLAN manuals that may need to be accessed in an emergency is shown below. The complete series of manuals is available on the Animal Health Australia website.¹

Table 1.1  AUSVETPLAN documents

<table>
<thead>
<tr>
<th>Document type</th>
<th>Manuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview document</td>
<td>Background information about AUSVETPLAN rationale, development and maintenance</td>
</tr>
<tr>
<td>Disease strategies</td>
<td>Individual disease and policy information for most of the diseases listed in the EADRA</td>
</tr>
<tr>
<td>Response policy</td>
<td>Summary disease and policy information for each EADRA disease not covered by individual disease strategies (see above)</td>
</tr>
<tr>
<td>Operational manuals</td>
<td>Decontamination</td>
</tr>
<tr>
<td></td>
<td>Destruction of animals</td>
</tr>
<tr>
<td></td>
<td>Disposal</td>
</tr>
<tr>
<td></td>
<td>Livestock welfare and management</td>
</tr>
<tr>
<td></td>
<td>Valuation and compensation</td>
</tr>
<tr>
<td></td>
<td>Wild animal response</td>
</tr>
<tr>
<td>Enterprise manuals</td>
<td>Artificial breeding centres</td>
</tr>
<tr>
<td></td>
<td>Feedlots</td>
</tr>
<tr>
<td></td>
<td>Meat processing</td>
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<tr>
<td></td>
<td>Saleyards and transport</td>
</tr>
<tr>
<td></td>
<td>Pig industry</td>
</tr>
<tr>
<td></td>
<td>Poultry industry</td>
</tr>
<tr>
<td></td>
<td>Wool industry</td>
</tr>
<tr>
<td></td>
<td>Zoos</td>
</tr>
<tr>
<td>Management manuals</td>
<td>Control centres management (Parts 1 and 2)</td>
</tr>
<tr>
<td></td>
<td>Laboratory preparedness</td>
</tr>
<tr>
<td>Outbreak manuals</td>
<td>Collations of individual disease, operational and enterprise information for use in an emergency disease outbreak</td>
</tr>
</tbody>
</table>


1.3 Nationally agreed standard operating procedures

Nationally agreed standard operating procedures (NASOPs)\(^2\) have been developed for use by jurisdictions during responses to emergency animal disease (EAD) incidents and emergencies. These procedures underpin elements of AUSVETPLAN and describe in detail specific actions undertaken during a response to an incident.

1.4 World Organisation for Animal Health listing

The World Organisation for Animal Health (OIE) includes ASF on its list of notifiable diseases as a swine disease.

OIE-listed diseases are diseases with the potential for international spread, significant mortality or morbidity within the susceptible species, and/or zoonotic spread to humans. OIE member countries that have been free from a notifiable disease are obliged to notify the OIE within 24 hours of confirming the presence of the disease.

The strategies in this document for the diagnosis and management of an outbreak of ASF are based on the recommendations in the OIE Terrestrial Animal Health Code (Chapter 15.1) and the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (Chapter 2.8.1). The strategies and policy guidelines are for emergency situations, and are not applicable to quarantine policies for imported livestock or livestock products.

1.5 Australian emergency animal disease listing

In Australia, ASF is included as a Category 3 emergency animal disease in the Government and Livestock Industry Cost Sharing Deed in Respect of Emergency Animal Disease Responses (EADRA). Category 3 diseases are those for which costs will be shared 50% by government and 50% by industry.

1.6 Manner and risk of introduction to Australia

The most likely sources of ASF infection are pork and pork products, porcine genetic material and incursions by infected pigs. The most significant risk of entry of ASF virus into Australia is via illegally imported contaminated pig products (such as pigmeat) that are swill fed to domestic pigs or accessed by feral pigs. (Swill feeding in Australia is prohibited.) Border inspection and screening for such products occur at ports, airports and mail centres; however, they could be brought in illegally by passengers on aircraft or ships, or via the post. There is also a risk from garbage discarded by fishing vessels or yachts. Illegally imported genetic material is another route of entry of the virus.

In 2004, Australia released a final Import Risk Analysis report for pigmeat.

Quarantine requirements to manage the risk of ASF include sourcing meat only from pigs that have been kept since birth in a country or zone free from ASF; processing the meat by canning; or processing the meat by dry curing, along with sourcing meat from premises free from ASF in an area where ASF is compulsorily notifiable. The importation into Australia of live pigs, porcine genetic material or offal is prohibited.

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3 These criteria are described in more detail in Chapter 1.2 of the OIE Terrestrial Animal Health Code (www.oie.int/index.php?id=169&L=0&htmfile=chapitre_criteria_diseases.htm).
1.7 Social and economic effects

Losses caused by ASF include mortalities, which can be very high, and loss of income from decreased meat production and loss of game-meat export markets. An uncontrolled outbreak in Australia would result in severe losses and unemployment at the farm, processor and retail levels. Prices of products from other animals might rise as a result of increased demand. However, if eradication could be undertaken quickly and effectively, there might be no lasting damage to the pig industry, provided the industry could recover its market share.

If ASF occurred in Australia, the disease could spread rapidly throughout the pig industry and the feral pig population. The feral pig population could be severely affected, and this may have a flow-on effect on the small game-meat export industry, and Indigenous communities that use feral pigs as a source of food.

After an initial outbreak, the disease could become progressively more widespread and costly; however, the loss of production in infected piggeries would decrease as the disease passed from the acute phase to the chronic phase (with recurring acute episodes).

Producers whose pigs escaped infection might attract a premium price for their produce. Alternatively, they might not benefit from the misfortunes of other producers; in Belgium, consumption of pigmeat fell by 25% during the 1985 outbreak, despite assurances that the meat was safe for human consumption.

The above estimates of loss include only the value of products at the farm gate, and not the losses in the ancillary processing, marketing and transport industries.

The small, but significant, export trade in pigs and pig products (with a value of $107.3 million as at April 2014) would almost certainly cease if Australian pigs were infected with ASF. Export markets represent about 10.5% of Australian production. Assuming that only limited numbers of pigs are destroyed in an ASF outbreak, the loss of export markets would result in massive domestic oversupply, which would quickly bring on a price collapse.

Prolonged loss of income for producers whose herds were destroyed and subjected to quarantine controls would be substantial, as a result of reduced market opportunities and changed management practices.

The stamping-out strategy (see Section 4.3.1) may cause the destruction of some genetically important herds, despite special efforts taken by their owners to protect them.

Social effects, other than those related to economics and Indigenous communities, would be slight. There would be very few restrictions on the movement of people, other than those who may have had direct contact with infected premises and would be required to undertake decontamination procedures (also refer to the Decontamination Manual). Changes would be made to the marketing and transportation of pigs.
2  Nature of the disease

African swine fever (ASF) is a highly contagious disease of pigs that may result in high or low case mortality rates, fever, hyperaemia of the skin and a variety of other clinical signs, including incoordination, diarrhoea and pneumonia.

It is clinically indistinguishable from classical swine fever (CSF), and similar lesions are seen at postmortem examination. The diseases are best distinguished from each other by laboratory tests.

2.1  Aetiology and pathogenicity

ASF virus is classified as an asfavirivirus, the only member of the family Asfarviridae. ASF virus is the only DNA virus known to be transmitted by arthropods. Isolates of the virus vary considerably in their virulence; highly virulent viruses result in high mortality, whereas viruses of low virulence may only result in seroconversion (Kleinboeker et al 1998).

2.2  Susceptible species

Domestic and feral pigs (Sus scrofa) are the only susceptible species in Australia outside zoos.

In Africa, the African warthog (Phacochoerus aethiopicus), African bush pig (Potamochoerus porcus) and possibly the African giant forest hog (Hylochoerus meinertzhageni) are susceptible to infection but do not show clinical signs. These species are important in the epidemiology of the disease in Africa.

The collared peccary (Tayassu tajacu) and the white-lipped peccary (Tayassu albirostris) have been shown to carry the virus in the Americas (Viñuela 1985).

2.3  World distribution and occurrence in Australia

2.3.1  World distribution

ASF was reported in settlers’ pigs in Kenya in 1909 and was subsequently described by Montgomery (1921) as a disease that could be differentiated from CSF by laboratory methods. Reports of ASF in Angola and South Africa followed, and the disease was shown to be present in most of sub-Saharan Africa (Penrith et al 2012).

ASF spread to Portugal in 1957; it was eradicated but reappeared in 1960 and quickly spread to Spain. It was endemic in the Iberian Peninsula, and this region was a major source for spread to other countries. The disease is now under control in both Spain and Portugal, and is restricted to feral pigs in small areas of both countries.

ASF has also been found in France, Italy (the disease is now endemic in feral pigs in Sardinia), Malta, Belgium, the Netherlands, Cuba, Brazil, the Dominican Republic and Haiti, but it has been eradicated from most of these countries. In Malta and the Dominican Republic, ASF was eradicated by the total elimination of pigs from the two countries (Geering et al 1995). Since June 2007, there have been reports of ASF outbreaks in many countries worldwide — most notably in a number of countries in
central Europe where the disease had not previously been reported. Mauritius reported its first outbreak in 2007, which was resolved in 2008. In 2014, outbreaks of ASF were reported for the first time in Estonia, Latvia, Lithuania and Poland.


2.3.2 Occurrence in Australia

There have been no outbreaks of ASF in Australia.

2.4 Epidemiology

2.4.1 Incubation period

The incubation period for ASF is usually 5–15 days but may be as long as 20 days.

OIE incubation period

The OIE *Terrestrial Animal Health Code* describes the longest incubation period for ASF as 15 days.

2.4.2 Persistence of agent and modes of transmission

General properties

ASF virus is stable at a wide range of pH levels (pH 4–10). The virus can be inactivated by cresol, 2% sodium hydroxide, 1% formalin, 4% anhydrous or 10% crystalline sodium carbonate (with 0.1% detergent), strong iodophors (1%) in phosphoric acid, ionic and nonionic detergents, and lipid solvents, including chloroform (Plowright et al 1994).

Environment (including windborne spread)

ASF virus survives for long periods under most environmental conditions and is resistant to a number of commercially available disinfectants that readily inactivate other pathogens (McDaniel 1980). Disinfectants that have been found to be effective against ASF virus under environmental conditions include potassium peroxymonosulfate, hypochlorites, and phenols and related compounds (cresols).

ASF virus is not inactivated by freezing and thawing. It can be inactivated in liquid media by heating at 60 °C for 30 minutes (MacDiarmid 1991; see also Section 4.3.7).

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**Susceptible animals**

**Live domestic animals**

Transmission of ASF virus is by direct contact with infected pigs or ingestion of products from infected pigs. Pigs with acute disease shed virus in high concentrations in all secretions and excretions that contain blood. In decreasing order of importance, virus is shed in faeces, urine and secretions (haemorrhages).

Virus has been isolated from the blood of pigs that did not show clinical signs for 8 weeks, and from lymphoid tissue for at least 12 months after recovery from infection. Pregnancy does not appear to cause reactivation of virus excretion.

Pigs infected by mild virus strains that cause subacute disease and pigs surviving acute disease may appear to recover quite rapidly and be clinically normal. However, they can become chronically infected. Virus is not usually excreted by such pigs for longer than about 5–6 weeks after their initial infection (Geering et al 1995), although McDaniel (1980) reported that most recovered pigs are virus carriers for long periods, perhaps for life. Transmission to other pigs can occur through direct contact for up to 1 month after recovery from infection (Wilkinson 1986).

The lower mortality that follows infection with mild strains of the virus means that outbreaks are not self-limiting, unlike infection with virulent strains.

ASF virus is not transmitted in the air from one piggery to another, but it does spread in the air within a piggery. Infection by the respiratory route can occur between pigs in close contact.

Movement of infected pigs is the most important means of spread between piggeries.

**Live wild (including feral) animals**

In Australia, feral pigs would become an important reservoir of the virus if they became infected. Secondary spread to domestic piggeries could then occur.

**Animal carcasses**

Carcasses of pigs that die during the acute phase of ASF contain more virus, and therefore are more infective to other pigs, than carcasses of chronic carriers of ASF that may pass antemortem and postmortem examinations at abattoirs. Carcasses of chronic carriers have, however, been linked to the spread of ASF.

**Animal products**

**Meat and meat products**

ASF virus has the ability to survive for many months in a protein environment, such as raw, unprocessed, frozen meat (Penrith and Vosloo 2009). The virus has been recovered after 150 days from infected meat kept at 4 ºC, after 104 days from meat kept at −4 ºC, and after 188 days from bone marrow stored at −4 ºC (MacDiarmid 1991). It has been recovered from processed hams after 5 months of storage and from the bone marrow of processed hams stored for 6 months (McDaniel 1980).
Brining alone is insufficient to inactivate ASF virus in hams. However, cooked or canned hams are safe, provided that they have been heated throughout to 70 °C. Although not cooked, Parma, Serrano and Iberico hams are rendered free from ASF by their 9–12-month curing process (Mebus et al 1997).

The virus has been recovered from putrefied serum stored at room temperature for 15 weeks, and from blood stored at 4 °C for 18 months to 6 years (EFSA 2009, Sánchez-Vizcaíno et al 2012).

In the Belgian outbreak in 1985 (Biront et al 1987), the European Union required that pigmeat produced in the infected area be placed in hermetically sealed containers and held at a temperature of at least 60 °C for 4 hours, with at least 30 minutes of this period above 70 °C. On one farm, 115 pigs were exhumed 3 months after they died. No virus was detected in their tissues; however, lesions were present, and antibodies were detected.

Since ASF virus is inactivated in liquid media by heating at 60 °C for 30 minutes, such heat treatment could be sufficient to render safe soups, broths and meat extracts; however, such a heat treatment would have no margin of error and would be very risky (MacDiarmid 1991; Pensaert 1989, cited by MacDiarmid 1991).

**Animal byproducts**

**Meatmeal**

Ingestion of pigmeat or pigmeat products infected with the virus is an important means of spread, especially in the first outbreak in a country. The majority of ASF outbreaks that have occurred in ASF-free countries or zones were caused by feeding waste food products derived from infected pigs to domesticated pigs (Sánchez-Vizcaíno 2010). The first cases of ASF in Malta, Brazil and Sardinia were in swill-fed pigs close to international air or sea ports.

In Australia, swill feeding is illegal.

**Semen and embryos from live susceptible animals**

The virus is present in semen and can be transferred in this way. The International Embryo Transfer Society has indicated that there is not enough information to reach a conclusion regarding the risk of transmission of ASF virus via embryos (see the Artificial Breeding Centres Manual).

**Equipment, including personal items**

ASF virus has been reported as being able to survive for up to 11 days (Sánchez-Vizcaíno et al 2012) or 60–100 days in faeces held at room temperature (Muller 1973, cited by Haas et al 1995), and for at least 30 days in contaminated pig pens (CFSPH 2006, Sánchez-Vizcaíno et al 2012). This is consistent with observations suggesting that the virus remained viable on premises for 3 months or longer.

Transfer by fomites, including bedding, feed, equipment, clothes and footwear, is a proven method of spread of ASF (Penrith and Vosloo 2009). People (especially veterinarians), veterinary instruments (especially hypodermic needles) and vehicles that have carried infected pigs have all been implicated (Wilkinson 1986).
Vectors

The epidemiology of ASF in Africa is quite different from its epidemiology in most parts of Europe and South and Central America (CFSPH 2006). In Africa, the soft argasid tick (*Ornithodorus moubata porcinus*), which is found in warthog burrows, maintains a source of ASF virus in the warthog population by transovarial transmission, and plays a significant role in the transmission of ASF between wild suids and domesticated pigs. However, the role of soft ticks in other regions is either less important or has not been demonstrated. On the Iberian Peninsula, the soft tick *Ornithodorus erraticus* contributed to transmission of the disease in outdoor pig production systems and served as a reservoir of virus for 1 year in previously infected areas that had been depopulated. This resulted in persistence of the virus for 5 years (Boinas et al 2011).

The only *Ornithodorus* ticks present in Australia are the inornate kangaroo tick (*O. gurneyi*) and the penguin tick (*O. capensis*), neither of which is known to feed on pigs. However, bloodsucking insects such as mosquitoes and biting flies (*Stomoxys* spp.) feeding on viraemic pigs can carry high levels of virus for 2 days and have been implicated in the mechanical spread of ASF within herds (CFSPH 2006).

2.5 Diagnostic criteria

2.5.1 Case definition

For the purposes of this manual, the case definition for ASF is:

- a confirmed laboratory diagnosis (for the index case), with or without clinical or pathological signs; or
- clinical signs in a susceptible animal after an outbreak has been confirmed and for the duration of the outbreak.

2.5.2 Clinical signs

ASF is a highly variable disease, with several forms. In its most spectacular form, there is high morbidity and a high case mortality rate. However, it can also be a very mild disease. This variability is largely due to differences in virulence among the many strains of the virus.

The case mortality rate is up to 100% for the acute form, which has a duration of 1–7 days. In the subacute form, the case mortality rate is lower, with deaths more likely in younger pigs, and the disease persists for longer (3–4 weeks).

Clinical findings of the various forms of the disease are as follows:

**Peracute form**
- pigs found dead with no prior clinical signs

**Acute form**
- fever up to 42 °C
- hyperaemia or cyanosis of extremities, particularly ears and snout
- loss of appetite or irregular appetite
- inability or unwillingness to stand up, or convulsions
- incoordination or stiff gait
- huddling together or piling one on top of another
- laboured breathing or coughing
- dysentery or diarrhoea
- conjunctivitis
- mucopurulent nasal discharge
- vomiting
- abortion

**Subacute form**

- clinical signs as for the acute form, but generally milder and persisting longer (3–4 weeks)
- fever, which may fluctuate irregularly and may exceed 40.5 °C
- occasionally, a purple colour over the pig's surface
- bleeding from injection sites
- abortion

**Chronic form (generally seen in pigs surviving the subacute form)**

- recurrent transient fever
- ill-thrift (failure to thrive), stunting and emaciation
- pneumonia (laboured breathing or coughing)
- arthritis
- cutaneous ulcers
- death, often due to secondary bacterial infections.

Pigs may become chronic carriers, with the virus present in their excretions (urine and faeces), without showing any of the clinical signs listed above.

### 2.5.3 Pathology

**Gross lesions**

**Acute form**

Findings include:

- enlarged and haemorrhagic lymph nodes, often resembling blood clots; the gastrohepatic, renal, mesenteric and submandibular lymph nodes are most often affected
- enlarged spleen (2–3 times its normal size), which may be necrotic, dark, friable or pulpy
- haemorrhages in almost any organ; they are most commonly seen on serosal membranes and in kidneys (as subcapsular petechiae), heart, urinary bladder, lung and gall bladder
- septal oedema of lungs, resulting in prominent interlobular septa
- fluid in body cavities.

**Subacute form**

Findings are more variable than for the acute form and include:

- lymph node and renal haemorrhage
- enlarged but not congested spleen
- lobular consolidation of cranial lung lobes
- haemorrhage of the intestinal lining, lymph nodes and kidney.
Chronic form

Findings include:

- enlarged lymph nodes
- fibrinous pericarditis and pleurisy
- lobular consolidation of lungs, which may progress to lobular necrosis
- small, hard, nodular white masses in lungs
- arthritis
- cutaneous ulcers
- poor body condition.

Microscopic lesions (histopathology)

Extensive necrosis of lymphatic tissue is common, particularly in lymph nodes with karyorrhexis (nucleus fragmentation in degenerating granular lymphocytes), and this may be accompanied by haemorrhage. Necrosis is more severe and frequent with ASF than CSF. There is vasculitis, with degeneration of endothelium and fibrinoid degeneration of artery walls in all organs. There is inflammation of the brain, spinal cord and spinal nerves, not involving pus, with necrosis of mononuclear cell cuffs around affected vessels.

2.5.4 Differential diagnosis

In the field, suspicion will be based on clinical signs and gross pathological lesions. Several pigs must be necropsied because the lesions present in individual animals may vary greatly. A composite picture of all lesions seen should be recorded. Pigs dying of the peracute form of the disease may show no gross lesions.

Substantial delays have occurred in initial diagnoses of ASF in countries where CSF is endemic. ASF was not diagnosed until 4 weeks after the initial infection in both Belgium (1985) and the Netherlands (1986), which both have comprehensive, competent veterinary services.

The following diseases and conditions should be considered in a differential diagnosis of ASF:

- CSF
- Aujeszky's disease
- erysipelas
- salmonellosis
- various poisons, including warfarin
- pasteurellosis/pneumonia
- any cause of ill-thrift
- any cause of abortion, mummification, stillbirths or weak piglets
- mulberry heart disease
- isoimmune thrombocytopenia purpura
- viral encephalomyelitis.

2.5.5 Laboratory tests

Because there is considerable overlap in the clinical and pathological signs seen in ASF with those of a number of other diseases (see Section 2.5.4), the diagnosis needs to be confirmed by isolation and
characterisation of the causative virus. Relevant laboratory tests should also be performed to exclude the principal differential diagnoses.

If an outbreak is confirmed to be caused by ASF virus, note that this agent is classified as a security sensitive biological agent (SSBA), to which regulatory requirements (eg for handling and reporting) apply. However, emergency situations, including emergency animal disease (EAD) outbreaks, can be exempted from some SSBA regulatory requirements.\(^7\) Clarification should be sought from the SSBA responsible officer at the facility concerned.

**Samples required**

Specimens required for detection and characterisation of the agent, serological testing and histopathology are as follows:

- **Identification of agent**
  - whole blood from live, suspect animals in EDTA anticoagulant
  - the following tissues collected aseptically at postmortem and forwarded unpreserved: tonsils, spleen, lymph nodes (gastrohepatic, mesenteric), lung, kidney, liver and ileum

- **Serological testing**
  - sera from animals suspected of having subacute or chronic disease

- **Histopathology**
  - a full range of tissues in neutral-buffered saline.

To minimise the risk of contamination, tissue samples should be taken at the commencement of the postmortem from affected pigs that have been killed and from pigs that have recently died.

**Transport of specimens**

Specimens should be forwarded to the CSIRO Australian Animal Health Laboratory (CSIRO-AAHL), Geelong, for emergency disease testing, after the necessary clearance has been obtained from the chief veterinary officer (CVO) of the state or territory of the suspect case, and after the CVOs of Victoria and Australia have been informed about the case and the transport of the specimens to Geelong. Sample packaging and consignment for delivery to CSIRO-AAHL should be coordinated by the relevant state or territory laboratory.

For some diseases (bluetongue, Hendra virus infection, influenza (any species), Newcastle disease), the state or territory diagnostic laboratory may conduct initial screening under the Laboratories for Emergency Animal Disease Diagnosis and Response (LEADDR) program. LEADDR is a coordinated laboratory network that provides a collaborative program of test harmonisation and quality assurance. Specimens will be forwarded to CSIRO-AAHL for confirmation of non-negative results, and for further testing and characterisation.

For further information, see the [Laboratory Preparedness Manual](#).

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\(^7\) www.health.gov.au/SSBA
Packing specimens for transport

Blood samples and unpreserved tissue specimens should be chilled and transported with frozen gel packs. For further information, see the Laboratory Preparedness Manual.

Laboratory diagnosis

The initial approach to ASF diagnosis is screening by real-time PCR (qPCR) as this method is rapid and sensitive, and can be scaled up readily if required. An antigen ELISA is also available, if required and if virus isolation will be attempted. Further characterisation and genotyping by sequence analysis can be carried out on primary samples or on isolates.

Serology is also available. Although serology generally plays a minor role in the initial diagnosis, it will be important in defining the nature and extent of any outbreak, and in the proof-of-freedom phase.

CSIRO-AAHL tests

The testing method used by CSIRO-AAHL is shown in Figure 2.1. Further details of tests currently available at CSIRO-AAHL are shown in Table 2.1.

AAHL ASF Testing Algorithm

![AAHL ASF Testing Algorithm diagram]

1. EDTA Blood, postmortem samples (spleen, lymph node, tonsil, kidney)
2. At start of an outbreak
3. For clarification of results as required.

Figure 2.1 The current approach to diagnostic testing at CSIRO-AAHL
Table 2.1 Laboratory tests currently available at CSIRO-AAHL for the diagnosis of African swine fever

<table>
<thead>
<tr>
<th>Test</th>
<th>Specimen required</th>
<th>Test detects</th>
<th>Time taken to obtain result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent detection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qPCR</td>
<td>EDTA blood/tissue</td>
<td>Viral genome</td>
<td>&lt;1 day</td>
</tr>
<tr>
<td>Virus isolation</td>
<td>EDTA blood/tissue</td>
<td>Virus</td>
<td>1–2 weeks</td>
</tr>
<tr>
<td>ELISA</td>
<td>EDTA blood/tissue</td>
<td>Antigen</td>
<td>1 day</td>
</tr>
<tr>
<td>Agent characterisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCR and sequencing (genotyping)</td>
<td>EDTA blood/tissue/virus isolate</td>
<td>Viral genome</td>
<td>2–3 days</td>
</tr>
<tr>
<td>Serology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELISA</td>
<td>Serum</td>
<td>Antibody</td>
<td>1 day</td>
</tr>
<tr>
<td>Immunoperoxidase test</td>
<td>Serum</td>
<td>Antibody</td>
<td>1 day</td>
</tr>
</tbody>
</table>

ELISA = enzyme-linked immunosorbent assay; PCR = polymerase chain reaction; qPCR = quantitative (real-time) PCR
Source: Information provided by CSIRO-AAHL, 2014 (refer to CSIRO-AAHL for most up-to-date information)

2.6 Resistance and immunity

ASF virus is a large DNA virus that encodes 165 genes in multilayered virus particles containing more than 50 proteins (Dixon et al 2013).

2.6.1 Innate immunity

Pig populations that have not been exposed to ASF virus, including the Australian pig herd, are fully susceptible.

Populations of domestic pigs have been found with greater resistance to the pathogenic effects of virulent ASF virus following exposure (Penrith et al 2004). However, it appeared that the resistance may not be genetically based but may be associated with epidemiological factors in the area of origin of the pigs. Approximately 40% of the pig population surveyed in Mozambique demonstrated some degree of innate resistance, with a broad range of variation (Penrith et al 2004).

2.6.2 Acquired immunity

The large variation in the clinical and pathological picture in different parts of the world is mainly due to variations in virulence of different strains of the virus, rather than to differences in the immune status of the pig population. Animals that survive are protected against a further homologous challenge but may be fully susceptible to heterologous challenges.

ASF virus has developed a number of defensive mechanisms that enable it to avoid the immune host response. The virus replicates primarily in macrophages, and interferes with the expression of genes
that are known to have a role in stimulating innate and acquired immunity. In addition, some of the virus proteins are known to inhibit the host immune response (EFSA 2009).

2.7 Vaccination and/or treatment of infected animals

Although attempts have been made to develop a suitable vaccine, there is currently no commercially available vaccine against ASF. This is primarily due to the complexity of the immune response to this virus (EFSA 2009).

Protection can be achieved through the use of low-virulence isolates obtained by passage in tissue culture, or through deletion of genes known to be responsible for virulence in addition to the use of low-virulence field strains. The protective mechanism is thought to involve both antibodies and cell-mediated immunity. Partial protection of pigs has been shown to follow transfer of antibodies (Onisk et al 1994).

Inactivated vaccines have produced an antibody response; however, the level of protection has been inadequate to withstand challenge. In contrast, live attenuated strains of ASF virus produced solid protection against homologous ASF virus challenge. Concerns about the safety of live attenuated virus have prevented their use.

There is no effective treatment for infected animals. Palliative treatment may alleviate the signs, but will not prevent the spread of infection and may make the detection of infected animals more difficult.
3 Principles of control and eradication

3.1 Critical factors for formulating response policy

3.1.1 Features of the disease

- African swine fever (ASF) is clinically indistinguishable from classical swine fever.
- Movement of infected animals is the most significant means of spread of the disease.
- Transport by fomites is a proven method of spread of ASF virus. Trucks used to transport semen, effluent and feed constitute a significant risk.
- ASF virus cannot be transmitted over long distances without human assistance.
- ASF is a highly variable disease with several forms, ranging from disease with high morbidity and high case mortality to a very mild disease.
- Tests are available for rapid detection of ASF, but early diagnosis of an outbreak may be delayed if ASF is present in the mild form, or if the initial infections are in small, noncommercial pig herds.
- ASF virus is shed in high concentrations in secretions and excretions containing blood during the acute phase of the disease.
- Pigs infected by mild virus strains or surviving acute disease may shed virus for more than 1 month following recovery.
- No vaccine is available.
- ASF virus may survive for long periods under Australian environmental conditions, and the virus is resistant to many treatments that inactivate other pathogens.
- The persistence of ASF virus in the environment limits the use of sentinel animals, prevents early restocking after an outbreak and requires ongoing monitoring due to the potential for re-emergence of ASF.
- Total cleaning and removal of all animal products (faeces, blood, etc) is essential before disinfection begins.
- The status of vectors in Australia is uncertain, although it is likely that competent vectors are present. Transmission of ASF in Australia will occur via the movement of animals rather than through vectors.
- There are no public health implications.

3.1.2 Features of susceptible populations

- Domestic and feral pigs are the only susceptible species in Australia, apart from animals in zoological collections.
- Feral pig and smallholder pig populations may not be easily identified or located.
- Smallholders may not recognise or report the disease, or seek assistance.
- Market fluctuations due to public health perceptions or product withdrawals would reduce the value of the industry.
- Trade in animal products may be jeopardised because of disease in feral pig populations.
- Intensive production systems are prone to rapid overcrowding if output is disrupted, and feed stores may not last longer than a week; thus, welfare implications will need to be considered during movement restrictions on live pigs.
3.2 Options for control and eradication based on the critical factors

Managing the risk of ASF would be based on the identified critical factors and would include:

- immediate imposition of movement controls on pigs and pig products
- registration of all commercial and small pig holdings, or another method of assuring the location of domestic pigs, particularly those in smallholdings; smallholders with pigs may not be aware of the need for property registration, and all properties with one or more pigs should be made aware of the requirement to have a property identification code
- application of mandatory biosecurity programs
- heightened swill-feeding prevention and assurance activities
- early determination of the extent of infection through rapid identification of infected premises (IPs) and potentially infected premises (including piggeries, saleyards, meatworks and cold stores), using quickly instituted serosurveillance and animal tracing, based on an epidemiological assessment
- swift declaration and effective policing of control areas, and rapid imposition of quarantine and movement controls on IPs and potentially infected premises, to prevent the movement of pigs, pig products and fomites that might carry ASF virus
- minimisation of the exposure of susceptible pigs by preventing direct and indirect contact of at-risk pigs with infected pigs, and potentially contaminated pig products and fomites
- elimination of infection from IPs and/or infected pig populations by the rapid destruction of pigs, sanitary disposal of carcasses and fomites, and decontamination
- implementation of appropriate zones and compartments
- recall of pigmeat and offal originating from IPs, and game meat and offal sourced from possibly infected feral pig populations
- gaining of smallholder support
- management of feral pig populations, and prevention of direct and indirect contact with domestic pigs.

The policy options for control and eradication of ASF are:

- **stamping out** — the prompt destruction and sanitary disposal of pigs infected with, or exposed to, ASF virus
- **long-term control** — recognition of endemic status, use of compartmentalisation, control of tick vectors and feral pigs, and enhanced biosecurity in the commercial pig industry. Final options will depend on whether the outbreak is a single- or multi-state outbreak, and whether the disease has become established in the feral pig population in areas that are largely inaccessible.

Eradication of ASF would be extremely difficult and involve considerable resources. In major outbreaks of the disease, eradication has only been achieved by total national depopulation of pigs. If feral pig populations in Australia become infected, eradication may be impracticable.

The policy to be implemented is described in Section 4.
4 Policy and rationale

4.1 Introduction

African swine fever (ASF) is a World Organisation for Animal Health (OIE)–listed disease that has the potential for rapid spread, causing significant production losses. It is of major importance in international trade in pigs and pig products.

4.1.1 Summary of policy

The response policy with regard to an outbreak of ASF will be determined by how early the outbreak is detected, the extent of the outbreak, the location of affected premises, virus virulence factors and whether feral pigs are involved.

The default policy is to control and eradicate the disease in the shortest possible time using a combination of strategies, including:

- early recognition and laboratory confirmation of cases
- an epidemiological study to establish the potential role of vectors in the transmission of ASF in Australia
- movement controls over pigs, pig products and other potentially contaminated items in declared areas, to minimise the spread of infection
- tracing and surveillance (based on epidemiological assessment) to determine the source and extent of infection (including, as necessary, in feral pigs), and subsequently to provide proof of freedom from the disease
- destruction of all pigs on infected premises (stamping out)
- disposal of destroyed pigs and decontamination of premises
- treatment or destruction and disposal of pig products that are likely to be contaminated, to reduce the source of infection
- decontamination of fomites (facilities, equipment and other items) to eliminate the pathogen
- disinsectisation of premises to eliminate potential arthropod vectors
- intensified control strategies for feral pigs to eliminate potential reservoirs in restricted areas
- recall of suspect pig products
- zoning/compartmentalisation to define infected and disease-free areas and premises
- industry support to enhance understanding of the issues, facilitate cooperation and address animal welfare issues
- a public awareness campaign.

If ASF is found to be widespread and eradication is considered impracticable, the strategies for long-term control of the disease will be determined following an epidemiological investigation, and consultation between governments and the pig industry. The policy adopted may involve increased biosecurity and long-term compartmentalisation.
4.1.2 Case definition

For the purposes of this manual, the case definition for ASF is:

- a confirmed laboratory diagnosis (for the index case), with or without clinical or pathological signs; or
- clinical signs in a susceptible animal after an outbreak has been confirmed and for the duration of the outbreak.

4.1.3 Cost-sharing arrangement

In Australia, ASF is included as a Category 3 emergency animal disease in the Government and Livestock Industry Cost Sharing Deed in Respect of Emergency Animal Disease Responses (EADRA). Category 3 diseases are those for which costs will be shared 50% by government and 50% by industry.

4.1.4 Criteria for proof of freedom

Any approach to declaring proof of freedom should be based on the OIE Terrestrial Animal Health Code 2014 sections on ASF (Chapter 15.1) and general surveillance (Chapter 1.4).

See Section 7 for details on establishing proof of freedom.

4.1.5 Governance

Chief veterinary officer

The chief veterinary officer (CVO) in the state or territory in which the outbreak occurs and, where relevant (for zoonotic diseases), the chief medical officer (CMO) are responsible for instituting control action within the state or territory. Where the jurisdiction plans to seek cost sharing of the response under the Emergency Animal Disease Response Agreement (EADRA), the CVO is also responsible for recommending an Emergency Animal Disease Response Plan (EADRP) for the particular outbreak to the Consultative Committee on Emergency Animal Diseases (CCEAD).

For cost-shared responses, CVOs will implement disease control measures as agreed in the EADRP and in accordance with relevant legislation. They will make ongoing decisions on follow-up disease control measures in consultation with the CCEAD and, where applicable, the National Management Group (NMG), based on epidemiological information about the outbreak.

Unaffected jurisdictions may also need to develop response plans to address jurisdictional activities that are eligible for cost sharing. Overall operational management of the incident rests with the CVO of the affected jurisdiction, with oversight by the CCEAD.

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Consultative Committee on Emergency Animal Diseases

For diseases covered by the EADRA, the CCEAD, convened for the incident, has specific responsibilities (as per Schedule 8 of the EADRA), as follows:

- Receive formal notifications from governments on suspected emergency animal disease (EAD) incidents.
- Advise the NMG if an EADRP is required.
- Recommend to the NMG an EADRP.
- Consider regular reports on progress of an EAD response and develop a consensus on further actions required.
- Provide regular consolidated reports to the affected governments and industries, and to the NMG, on the status of an EAD response.
- In circumstances where rapid eradication of an EAD is judged no longer feasible, provide advice and recommendations to the NMG on when the EAD response should be terminated, when cost sharing should no longer apply, and options for alternative arrangements.
- Determine when a disease has been controlled or eradicated under an EADRP.
- Recommend when proof of freedom has been achieved following the successful implementation of an EADRP.

The CCEAD reports to the NMG when appropriate.

National Management Group

If convened for the specific incident, the NMG decides on whether cost sharing will be invoked (following advice from the CCEAD) (see Section 4.5) and approves the EADRP. It also has responsibility for authorising an order for vaccine (if relevant), on advice from the CCEAD. Also refer to Schedule 8 of the EADRA.

For further details, refer to the Overview Document.

For information on the responsibilities of the state coordination centre and local control centre, see the Control Centres Management Manual (Parts 1 and 2).

4.2 Public health implications

ASF has no public health implications.

4.3 Control and eradication policy

The default policy is to control and eradicate ASF through stamping out and to re-establish the ASF-free status of Australia as quickly as possible. Stamping out will be carried out in association with movement controls, decontamination, zoning and compartmentalisation, and tracing and surveillance, to minimise severe production losses. The selected strategies will take into account that the disease is spread rapidly by direct contact with infected pigs and ingestion of contaminated products, by indirect contact on fomites, and via tick and insect vectors.

Stamping out is preferred because international experience has shown it to be effective, and cost–benefit analyses have shown it to be justified. This strategy also permits a more rapid declaration of
freedom from ASF under the OIE Terrestrial Code. However, eradication can only be achieved if resources are available to eliminate infected pigs as fast as, or faster than, the disease is spreading.

Within this overall policy, the strategies selected will depend on a thorough assessment of the epidemiological situation at the time, and will need to be reassessed during the course of an outbreak and altered if necessary.

4.3.1 Stamping out

On infected premises (IPs), all pigs will be destroyed. On dangerous contact premises (DCPs), the following will be destroyed:

- pigs originating from an IP
- pigs that have access to the faeces, urine and/or secretions of pigs moved from an IP
- pigs that have been injected with hypodermic needles previously used on an IP
- pigs that have been handled by personnel immediately after they have handled pigs from an IP.

Any further stamping out will be done on the basis of tracing and surveillance information, the controls in place and the likelihood of spread from suspect premises (SPs). ASF virus is very hardy and able to survive for long periods outside the host, so it is important that the major sources of virus be eliminated quickly. The destruction of pigs on DCPs affords an opportunity to dispose of exposed pigs before they develop clinical disease and begin to excrete virus.

Stamping out of feral pig populations will need careful assessment. Since disturbance of pigs may cause them to migrate to a new area, conduct of activities will need careful planning. It is essential that the relevant government wildlife management officers, the game meat industry and Indigenous communities are included in the response. Refer to the Wild Animal Response Strategy.

Efficient, humane procedures will be employed to kill pigs, without moving them from the site (see the Destruction of Animals Manual).

Properties that have been depopulated and thoroughly decontaminated will be restocked initially with only a small percentage of the normal capacity of the piggery. These pigs will act as sentinel animals and will be subject to surveillance to evaluate the efficacy of the decontamination procedure. Sentinel animals should not be introduced to a piggery until 6 weeks after the completion of all decontamination procedures because of the demonstrated ability of the virus to survive for prolonged periods in the environment. Consideration should be given to duplicating decontamination procedures after 14 days to increase the potential for virus elimination.

To minimise the risk of prolonging persistence of the virus in the piggery, a staged repopulation strategy following the introduction of sentinel animals should be adopted.

4.3.2 Quarantine and movement controls

See Section 6 for details on declared premises and areas, and recommended quarantine and movement controls.

Quarantine

Quarantine will be immediately imposed on all premises and areas on which infection is either known or suspected.
Premises will be declared (see Section 5.2). A restricted area (RA) and control area (CA) will be declared around the infected premises (see Section 5).

**Movement controls**

Movement controls are best implemented through the declaration of declared areas and linking permitted movements to each area. As a general principle, the aim of movement controls is to reduce the spread of disease by preventing the movement of infected animals, infected animal products and infected vectors (where relevant for the disease), and by allowing movements that pose a minimal risk.

Section 6.4 provides details on movement controls for live animals, reproductive material (semen and in vivo–derived embryos), animal products and byproducts, waste products and effluent, and other items that might be contaminated.

**4.3.3 Tracing and surveillance**

**Tracing**

Tracing will extend back for a minimum of 30 days before the first appearance of clinical signs on the IP and will continue up to the time that effective quarantine was imposed on the IP. It will involve an extensive investigation into the movements of animals, people, vehicles, equipment and products over this period. The investigation will include clinical examination of live pigs, postmortem examinations, serology and an examination of herd records. Other activities to determine the extent of infection will include retrospective examination of abattoir records for high condemnation rates for fever, and retrospective examination of samples submitted to laboratories from outbreaks of disease that could have been ASF.

The primary case(s) will need to be identified as soon as possible, together with the likely date of initial infection and the extent of spread of infection, by investigating the movements of pigs, people and other items that could transmit infection to and from the IPs. The date of entry of disease into each IP should be determined to assist trace-back and trace-forward investigations.

**Surveillance**

Once the RA has been established, intensive surveillance will be carried out on all trace premises (TPs), SPs and DCPs. Surveillance will be maintained for 30 days after the last date of possible transmission, and premises will retain their declared status during this period.

Because swill feeding is a major mode of transmission, intensive enforcement of the ban on swill feeding will need to be kept under consideration during an outbreak and for the 40-day period after the last case.

Surveillance will also be necessary after the disease has been eradicated, and the IPs and DCPs are repopulated. Continued surveillance will be necessary in the RA, CA and outside area, including feral pig populations in the vicinity of the RA.
4.3.4 Zoning and compartmentalisation for international trade

General considerations

The OIE sets international standards for the improvement of animal health and welfare, and veterinary public health worldwide, including standards for safe international trade in animals and their products.

According to the OIE Terrestrial Animal Health Code, establishing and maintaining a disease-free status throughout the country should be the final goal for OIE Members. However, given the difficulty of establishing and maintaining a disease-free status for an entire territory, especially for diseases whose entry is difficult to control through measures at national boundaries, there may be benefits to a Member in establishing and maintaining a subpopulation with a distinct health status within its territory. Subpopulations may be separated by natural or artificial geographical barriers (‘zoning’) or, in certain situations, by the application of appropriate management practices (‘compartmentalisation’). In practice, spatial considerations and good management, including biosecurity plans, play important roles in the application of both concepts.

Compartmentalisation is based on biosecurity provisions of specific enterprises and is a joint industry–government undertaking. Zoning is based on geographic areas and is a government responsibility.

The OIE guidelines for ASF are in Chapter 15.1 of the OIE Terrestrial Code.

If desired, a zoning application would need to be prepared by the Australian Government in conjunction with the relevant jurisdiction(s). The recognition of zones must be negotiated bilaterally with trading partners and is not an overarching international agreement. Zoning will also require considerable resources that could otherwise be used to control an outbreak, and careful consideration will need to be given to prioritising these activities.

Agreements between trading partners will take time to develop, consider and finalise, as a result of the need for provision of detailed information, costing and resourcing, and national frameworks to underpin the approach that is developed. An importing country will need assurance that its animal health status is not compromised if it imports from an established ASF-free zone in Australia. It is not known how Australia’s trading partners would react to a zoning proposal; some countries might not accept ‘zone freedom’.

Eradication may be achieved before a decision on a free-zone application is reached.

Managing disease-free zones is a responsibility of veterinary authorities.

4.3.5 Vaccination

There is currently no vaccine available for ASF.

4.3.6 Treatment of infected animals

The treatment of infected animals is not effective and will not be undertaken.

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9 www.oie.int/index.php?id=169&L=0&htmfile=chapitre_zoning_compartment.htm
4.3.7 Treatment of animal products and byproducts

It may be possible to heat treat product from pigs not showing clinical signs to ensure its safety. Carcasses, products and fomites are significant sources of virus; this makes the movement of live animals (for processing) and vehicles from IPs, DCPs and SPs a dangerous practice that is likely to lead to further spread of the virus.

Pig products from IPs will be destroyed on the premises, where possible. They will only be moved to other areas for disposal as a last resort and only under permit following appropriate decontamination (see Section 6.4.3).

4.3.8 Disposal of animals, and animal products and byproducts

One of the major objectives of the eradication program is prompt and effective disposal of infective material. Available methods include burial, cremation and, in some cases, the use of rendering plants.

Disposal of very large numbers of pigs in a short time will present environmental and logistical problems (see the Disposal Manual). The potential for alternative means of disposal should be investigated.

All pigs that die on uninfected piggeries within the CA, or possibly further afield, will be disposed of immediately using the disposal option suitable for the site to prevent them from being cannibalised or moved away from the disposal site by feral pigs.

4.3.9 Decontamination

Because of the hardiness of the virus under a wide range of conditions in the environment — particularly in carcasses, in pig products and on fomites — everything, including people, that may have come into contact with infected or suspect animals will be decontaminated. It is essential that all organic matter is removed before decontamination commences. Organic matter should be treated as infected material and disposed of accordingly (see Section 6.4.4). Where decontamination cannot be effectively undertaken, the item must be disposed of in a safe manner.

Decontamination will include treatment to eliminate mosquitoes and tick vectors (also known as disinsectisation), as appropriate.

Equipment and fixtures, especially valuable electrical equipment, will need to be dismantled, then decontaminated by hand, rather than by the use of high-pressure water or steam hoses.

The yards and surroundings of IPs, burial or burning grounds, and rendering plants will be decontaminated as soon as possible (see the Decontamination Manual).

4.3.10 Wild animal control

If ASF were to become established in the feral pig population, it would be very difficult, if not impossible, to eradicate. Accordingly, the strategy will be to minimise contact between feral pigs and domestic pigs, and to destroy local populations of feral pigs as necessary to eliminate the disease.

Methods to achieve these aims include:

- preventing feral pigs coming in contact with domestic pigs by fencing the piggery
• eliminating or reducing the numbers of feral pigs in areas where domestic pigs are held, especially in the RA and CA
• immediately disposing of carcasses on pig farms to prevent their consumption by feral pigs.

For further information, see the **Wild Animal Response Strategy**.

### 4.3.11 Vector control

Bloodsucking insects such as mosquitoes and biting flies that feed on viraemic pigs and then on uninfected pigs have been implicated in the mechanical spread of ASF within herds. An insect control program may need to be carried out on all IPs and DCPs. Entomologists and private pest control companies may need to be consulted and employed.

Although rodents are not susceptible to ASF, control measures to effectively suppress rodent populations must be implemented to prevent mechanical transmission of virus between piggeries or sections of piggeries.

### 4.3.12 Public awareness and media

If the disease is present in its most severe form, it will result in high morbidity and high case mortality in pigs. Close liaison with industry, the media and the public will be important to ensure that all parties are fully aware of the consequences of the disease in pigs, to reassure the public that there are no public health implications, and to reinforce that there are no vaccination or treatment options. The agreed strategies, including stamping out, need to be carefully explained in an effort to maintain public confidence in pig products. Sensationalised reporting of the possible destruction of animals will have a powerful detrimental impact on public reaction to the product.

A media campaign must emphasise the importance of farmers inspecting susceptible animals regularly, and reporting suspicious lesions and unusual deaths promptly. The regulations concerning swill feeding should be emphasised, as well as the need to avoid contact between domestic and feral pigs.

### 4.4 Other strategies

If eradication is considered to have become impracticable, the strategy for long-term control of the disease will be determined following consultation between governments and the pig industry. An epidemiological investigation will need to be carried out to determine how ASF became established before decisions can be made on the appropriate strategies to be followed. Producers will need to establish a management system — this might involve movement restrictions and control over the treatment of product.

If the disease becomes established because of a delay in initial diagnosis, leading to widespread infection in both domestic and feral pigs, possible strategies will still be directed to eradication in either the short or long term. In either case, intensified measures to control feral pig numbers and restrict the movement of domestic pigs would be appropriate. Infection in feral pigs will prolong and make much more difficult any eradication program.

Because swill feeding is a major mode of transmission, enforcement of swill feeding bans is a high priority for an affected jurisdiction.
4.5 Funding and compensation

4.5.1 General considerations

Details of the cost-sharing arrangements can be found in the Overview Document and the Valuation and Compensation Manual.
5 Guidelines for classifying declared areas and premises

5.1 Declared areas

A declared area is a defined tract of land that is subjected to disease control restrictions under emergency animal disease (EAD) legislation. There are two types of declared areas: restricted area (RA) and control area (CA).

Declared areas are risk based, with several areas or premises of higher risk nested within areas of lower risk.

All declared areas need to be clearly identified and easily understood, so that all affected parties can recognise which area they are in, and what regulations and control measures are applicable to them.

Declared areas are declared by a chief veterinary officer (CVO) or their delegate, or a ministerial declaration, according to the appropriate legislation of the states and territories involved.

5.1.1 Transmission area (TA)

Not relevant.

5.1.2 Restricted area (RA)

An RA is a relatively small legally declared area around infected premises (IPs) and dangerous contact premises (DCPs) that is subject to disease controls, including intense surveillance and movement controls.

An RA will be a relatively small declared area\(^\text{10}\) (compared with a CA) drawn with at least 3-km radius around all IPs and DCPs, and including as many suspect premises (SPs), trace premises (TPs) and dangerous contact processing facilities (DCPFs) as practicable. Based on risk assessment, the RA is subject to intense surveillance and movement controls. The purpose of the RA is to minimise the spread of the EAD. The RA does not need to be circular but can have an irregular perimeter, provided that the boundary is initially an appropriate distance from the nearest IP, DCP, DCPF, SP or TP. Multiple RAs may exist within one CA.

The boundaries will be modified as new information becomes available, including from an official surveillance program. The actual distance in any one direction will be determined by factors such as terrain, the pattern of livestock movements, livestock concentrations, the weather (including prevailing winds), the distribution and movements of relevant wild (including feral) animals, and known characteristics of the disease agent. In practice, major geographic features and landmarks, such as rivers, mountains, highways and roads, are frequently used to demarcate the boundaries of the RA. Although it would be convenient to declare the RA on the basis of local government areas, this may not be practical, as such areas can be larger than the particular circumstances require.

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\(^{10}\) As defined under relevant jurisdictional legislation
5.1.3  Control area (CA)

A CA is a legally declared area where the disease controls, including surveillance and movement controls, applied are of lesser intensity than those in an RA (the limits of a CA and the conditions applying to it can be varied during an incident according to need).

A CA is a disease-free buffer between the RA and the outside area (OA). Specific movement controls and surveillance strategies will be applied within the CA to maintain its disease-free status and prevent spread of the disease into the OA.

An additional purpose of the CA is to control movement of susceptible livestock for as long as is necessary to complete tracing and epidemiological studies, to identify risk factors, and forward and backward risk(s).

The CA will be a larger declared area around the RA(s) — initially, possibly as large as the state or territory in which the incident occurs — where restrictions will reduce the risk of disease spreading from the RA(s). The CA will have a minimum radius of 10 kilometres, encompassing the RA(s). It may be defined according to geography, climate and the distribution of relevant wild (including feral) animals. The boundary will be adjusted as confidence about the extent and distribution of the incident increases.

In general, surveillance and movement controls will be less intense in the CA than in the RA, and disease-susceptible animals and their products may be permitted to move under permit within and from the area.

5.1.4  Outside area (OA)

The OA is the area of Australia outside the declared (control and restricted) areas.

The OA is not a declared area but is used to describe the rest of Australia outside the declared areas. The OA will be subject to surveillance. Because it is highly desirable to maintain the OA as ‘disease free’, the movement of animals and commodities from the RA and CA into the OA will be restricted.

The OA will be of interest for ‘zoning’ and ‘compartmentalisation’ for purposes of trade access, as well as for disease control.

5.1.5  Other types of areas

It is possible that other types of areas (eg vaccination area or surveillance area), which are not legally declared, may be used for disease control purposes in some jurisdictions.

5.2  Declared premises

The status of individual premises will be declared after an epidemiological risk assessment has been completed.

Based on the disease risk they present, the highest priorities for investigations are IPs, DCPs, DCPFs, SPs and TPs.

In a disease outbreak, not all classifications may be needed. Premises classifications are mutually exclusive — that is, a given premises can have only one classification at any given time. After an
epidemiological investigation, clinical assessment, risk assessment or completion of control measures, a premises may be reclassified.

5.2.1 Infected premises (IP)

An IP is a defined area (which may be all or part of a property) on which animals meeting the case definition are or were present, or the causative agent of the EAD is present, or there is a reasonable suspicion that either is present, and that the relevant CVO or their delegate has declared to be an IP.

A premises with susceptible animals that have met the case definition will be declared an IP. For most diseases, the RA(s) will include all IPs.

For most diseases, the classification of a premises as an IP would be followed by the declaration of the areas around it as an RA and a CA. In the case of vector-borne diseases, a transmission area (TA) may also be identified, if required.

Depending on the situation, control measures in accordance with the agreed Emergency Animal Disease Response Plan (EADRP) or the relevant AUSVETPLAN disease strategy or response policy brief may be applied immediately, or may await the outcomes of further investigation of the IP.

When the required control measures for an IP have been completed, the premises would be classified as a resolved premises (RP). After further risk assessment, it may be reclassified as:

- a zero susceptible species premises (ZP), if destocked
- an at-risk premises (ARP) with a vaccination qualifier (ARP-VN), if not destocked, and vaccinated
- an ARP with an assessed-negative qualifier (ARP-AN), if neither destocked nor vaccinated.

If a premises has been classified as an IP on the basis of clinical signs as per the case definition, and subsequently both the EAD and the causative agent are confirmed as absent (ie a ‘false’ declaration), the premises would be reclassified as an RP. Thereafter, depending on the specific disease and its epidemiology, it would be reclassified as a ZP or an ARP (the qualifiers AN and/or VN may also be used, depending on the actions taken on the premises).

5.2.2 Suspect premises (SP)

SP is a temporary classification of a premises that contains a susceptible animal(s) not known to have been exposed to the disease agent but showing clinical signs similar to the case definition, and that therefore requires investigation(s).

For most diseases, the RA should contain as many SPs as practical. Every effort should be made to investigate and reclassify SPs as soon as possible. SPs are considered a very high priority for veterinary investigations. The investigation and risk assessment may produce the following outcomes:

- If the case definition is confirmed, the premises would be classified as an IP.
- If the case definition is not confirmed but suspicion remains, the premises would continue to be classified as an SP, until further investigation determines its reclassification.

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11 Less contagious diseases (eg Hendra virus, anthrax, Australian bat lyssavirus) do not use declared areas as part of their control measures. See the applicable AUSVETPLAN disease strategies or response policy briefs for details.

12 An EADRP will usually be prepared for consideration at the first CCEAD meeting, at the start of a disease response.

13 During the early phase of an EAD response, a comprehensive ‘initial case definition’ is used — eg individual and herd clinical signs, epidemiological investigation and risk assessment, and laboratory evaluation. Later in the response, the ‘response case definition’ may be used, which may be only clinical signs and on-site clinical assessment.
• If the case definition is ruled out, the premises would be given the qualifier AN. If it is located in the RA, it would then be reclassified as an ARP with the qualifier AN (ARP-AN). If it is located in the CA, it would be classified as a premises of relevance (POR) with the qualifier AN (POR-AN).

5.2.3 Trace premises (TP)

TP is a temporary classification of a premises that contains a susceptible animal(s) that tracing indicates may have been exposed to the disease agent, or contains contaminated animal products, wastes or things, and that requires investigation(s).

For most diseases, the RA should include as many TPs as practical. Every effort should be made to investigate and reclassify a TP as soon as possible. Exposure may occur from animal movements, contaminated material, vehicles, equipment and fomites, as well as via aerosol, especially if the premises is contiguous with an IP. The investigation and an epidemiological assessment may produce the following outcomes:

• If the case definition is met, the premises would be classified as an IP.
• If it appears highly likely that the disease is present and that the TP is highly likely to contain an infected animal(s) or contaminated animal products, wastes or things, even though there are no visible clinical signs, the premises would be classified as a DCP or a DCPF.
• If the investigation shows no evidence of the EAD, the premises would be assessed as negative. If it is located in the RA and there are susceptible animals remaining, it would then be reclassified as an ARP with the qualifier AN (ARP-AN). If it is located in the CA, it would be classified as a POR with the qualifier AN (POR-AN).
• If the tracing investigation reveals no susceptible animals or risk products, wastes or things on the destination premises, a TP may be reclassified as a ZP.

5.2.4 Dangerous contact premises (DCP)

A DCP is a premises, apart from an abattoir, knackery or milk processing plant or other such facility, that, after investigation and based on a risk assessment, is considered to contain a susceptible animal(s) not showing clinical signs, but considered highly likely to contain an infected animal(s) and/or contaminated animal products, wastes or things that present an unacceptable risk to the response if the risk is not addressed, and that therefore requires action to address the risk.

During the initial phase of a response, the RA should contain all the DCPs. As the incident develops, epidemiological investigation and tracing from IPs, SPs and TPs within the RA could identify DCPs that are sufficiently distant that they are outside the existing RAs and within the CA. This could trigger an extension of the RA to include them. However, it may prove impractical to extend an RA if the DCP is sufficiently distant from the existing RA. The trigger to declare a separate RA would be the identification of an IP. A DCP on its own does not trigger an RA. In these cases, it is possible that a DCP would be situated within a CA.

Whether an RA is drawn around a DCP depends on whether the transmission risk can be contained on the premises using premises-specific measures, or whether there is a need for RA measures to be applied as well, involving surrounding properties in heightened surveillance and tighter movement controls. The characteristics of the disease and its behaviour will be the major determinant. The risk assessment would consider these, as well as the stage of the response, the animal(s) present and the local situation.
Although susceptible animals on such premises are not showing clinical signs, they are considered to have been significantly exposed to the disease agent — this might be via an infected animal(s); a vector; contaminated animal products, wastes or things; or another transmission mechanism. If susceptible animals on a premises were exhibiting clinical signs that were similar to the case definition, the premises must be classified as a SP.

Since a DCP presents an unacceptable risk to the response if the risk is not addressed, such premises are subjected to appropriate control measures, including ongoing epidemiological monitoring, risk assessment and investigation, as required. Monitoring, risk assessment or investigation of a DCP may produce the following outcomes:

- If the presence of an infected animal or contaminated animal products, wastes or things is confirmed, the premises would be classified as an IP.
- If their presence is not confirmed but the likelihood is considered to remain high, the premises would continue to be classified as a DCP until completion of control measures enables it to be reclassified as an RP. A subsequent risk assessment would allow it to be reclassified as an ARP with an AN qualifier. If animals had been vaccinated as part of the control measures, the premises may also have the qualifier VN.
- If it is considered unlikely that an infected animal or contaminated animal products, wastes or things are present, the premises would be assessed as negative (DCP-AN). If it is located in the RA, it would then be reclassified as an ARP with the qualifier AN. If it is located in the CA, it would be classified as a POR with the qualifier AN.

Once the control measures are completed, the DCP will be reclassified as an RP.

### 5.2.5 Dangerous contact processing facility (DCPF)

A DCPF is an abattoir, knackery, milk processing plant or other such facility that, based on a risk assessment, appears highly likely to have received infected animals, or contaminated animal products, wastes or things, and that requires action to address the risk.

Particularly for DCPFs, classification provides authorities with a framework for the exercise of legal powers over the premises and to facilitate product tracking, and serves as a communication tool for reporting nationally and internationally on progress in the response.

Since a DCPF presents an unacceptable risk to the response if the risk is not addressed, such premises are subjected to appropriate control measures, including ongoing epidemiological monitoring, risk assessment and investigation, as required. Monitoring, risk assessment and investigation of a DCPF may produce the following outcomes:

- If the presence of an infected animal or contaminated animal products, wastes or things is confirmed, the premises would be classified as an IP.
- If their presence is not confirmed but the likelihood is considered to remain high, the premises would continue to be classified as a DCPF until completion of control measures enables it to be reclassified as an RP. A subsequent risk assessment may allow it to be reclassified as an approved processing facility (APF), if increased biosecurity measures are maintained.
- If it is considered unlikely that an infected animal or contaminated animal products, wastes or things are present, the premises would be assessed as negative (DCPF-AN). It may then be reclassified as an APF, if increased biosecurity measures are maintained.

Once the control measures are completed, the DCPF will be reclassified as an RP.
If, as part of disease control management, a DCPF is used to slaughter suspect or infected animals, it will be reclassified as an IP until it meets the definition for an APF or ZP.

5.2.6 Approved processing facility (APF)

An APF is an abattoir, knackery, milk processing plant or other such facility that maintains increased biosecurity standards. Such a facility could have animals or animal products introduced from lower risk premises under a permit for processing to an approved standard.

Before being classified as an APF, the premises is assessed to confirm that it has not received infected animals, or contaminated animal products, wastes or things, and is operating according to agreed biosecurity standards.

If, during the course of a response, the premises is suspected to have received infected animals, or contaminated animal products, wastes or things, it will be reclassified as a DCPF pending further investigation.

5.2.7 At-risk premises (ARP)

An ARP is a premises in an RA that contains a live susceptible animal(s) but is not considered at the time of classification to be an IP, DCP, DCPF, SP or TP.

The animal(s) on such premises are subject to disease control procedures, such as regular surveillance and movement restrictions, that are appropriate to the RA.

5.2.8 Premises of relevance (POR)

A POR is a premises in a CA that contains a live susceptible animal(s) but is not considered at the time of classification to be an IP, SP, TP, DCP or DCPF.

The animal(s) on such premises are subject to disease control procedures, such as heightened surveillance and movement restrictions, that are appropriate to the CA.

5.2.9 Resolved premises (RP)

An RP is an IP, DCP or DCPF that has completed the required control measures and is subject to the procedures and restrictions appropriate to the area in which it is located.

Later in a response, as control measures on IPs, DCPs and DCPFs are completed, the premises are reclassified to RP, and their risk status is progressively reviewed.

After appropriate investigation and risk assessment, an RP will become an ARP, POR, ZP or APF.

5.2.10 Unknown status premises (UP)

A UP is a premises within a declared area where the current presence of susceptible animals and/or risk products, wastes or things is unknown.

If an investigation and epidemiological risk assessment on a UP confirmed:
• the presence of an infected animal or contaminated animal products, wastes or things, the premises would be classified as an IP
• that it contained no susceptible animals and/or risk products, wastes or things, the UP would be reclassified as a ZP
• the presence of susceptible animals and excluded the presence of an EAD or the causative agent of the EAD, the UP would be reclassified as an ARP if in the RA, or a POR if in the CA
• clinical signs similar to the case definition, the UP would be reclassified as an SP
• an epidemiological link to a risk premises, the UP would become a TP
• a high-risk epidemiological link but without clinical signs of an EAD, the UP would be reclassified as a DCP or DCPF.

5.2.11 Zero susceptible species premises (ZP)

A ZP is a premises that does not contain any susceptible animals or risk products, wastes or things.

5.2.12 Qualifiers

The following qualifying categories may be added to a property status.

Assessed negative (AN)

AN is a qualifier that may be applied to ARPs, PORs and premises previously defined as SPs, TPs, DCPs or DCPFs that have undergone an epidemiological and/or laboratory assessment and have been cleared of suspicion at the time of classification, and can progress to another status. The animals on such premises are subject to the procedures and movement restrictions appropriate to the declared area (RA or CA) in which the premises is located.

This classification is a description to document progress in the response and in the proof-of-freedom phase. The AN qualifier is a temporary status and only valid at the time it is applied. The time that the AN qualifier remains active will depend on the circumstances and will be decided by the jurisdiction. One day is considered a reasonable guideline. The AN qualifier should also provide a trigger for future surveillance activity to regularly review, and change or confirm, a premises status.

The AN qualifier can also function as a counting tool to provide quantitative evidence of progress, to inform situation reports in control centres during a response. It provides a monitor for very high-priority premises (SPs and TPs) as they undergo investigations and risk assessment, and are reclassified, as well as a measure of surveillance activity overall for ARPs and PORs.

The AN qualifier can be applied in a number of ways, depending on the objectives and processes within control centres. The history of each premises throughout the response is held in the information system; the application of the AN qualifier is determined by the jurisdiction, the response needs and the specific processes to be followed in a local control centre.

Vaccinated (VN)

No suitable vaccines are currently available for use in Australia, and a vaccination program for the control of ASF is not a viable option.
5.3 Guidelines for reclassifying previously declared areas

Maintaining movement restrictions on areas for long periods has important implications for resource management, animal welfare, business continuity, and socioeconomic impacts on producers and regional communities.

During the course of an EAD response, it may become necessary for a CA or RA to be expanded, as additional geographic areas or new foci of infection are identified. Later in the response, as control is achieved, mechanisms for gradually reducing the size of the CA and RA can be introduced.

An EAD may involve multiple foci of infection, with several jurisdictions potentially involved. Since disease might be controlled at different rates in different areas, there may be the opportunity to progressively lift restrictions on an area basis. This would involve reclassifying previously declared areas (RAs and CAs), with a staged approach to lifting of movement restrictions. This is a key step in the recovery process and will have positive benefits on the community.

The lifting of restrictions in declared areas is managed by jurisdictions according to their local legislation, regulations and processes.

The key principles for reclassifying a previously declared area during a response should include the following, noting that not all will be relevant for some diseases:

- The area should be epidemiologically distinct from other declared areas.
- All TPs and SPs have been investigated and reclassified, and all IPs, DCPs and DCPFs in the area have been reclassified as RPs.
- All tracing and surveillance associated with EAD control has been completed satisfactorily, with no evidence or suspicion of infection in the area.
- A minimum period of [XXX] days has elapsed since pre-determined disease control activities and risk assessment were completed on the last IP or DCP in the area.
- An approved surveillance program (including the use of sentinel animals, if appropriate) has confirmed no evidence of infection in the RA (see below).
- For vector-borne diseases, vector monitoring and absence of transmission studies indicate that vectors are not active.

Lifting of restrictions is a process managed by the combat CVO under jurisdictional legislation and consistent with the most current agreed EADRP. When the appropriate conditions are satisfied, a combat jurisdiction can, in consultation with the Consultative Committee on Emergency Animal Diseases (CCEAD), reduce the size of the RA or lift all restrictions. The previous part of the RA would then become part of the CA. Jurisdictions should be able to present documented evidence that the appropriate conditions have been met.

When an RA is lifted and becomes part of the CA, it will have a lower risk status, and the movement restrictions that apply will be consistent with those applying within the CA. Over time, all of the RAs will be reduced and lifted.

If there is more than one combat jurisdiction involved, each will use its own appropriate legal jurisdictional mechanisms to lift the declaration of the RA or CA, coordinating with each other and consulting with the CCEAD to ensure wide communication and coordination.

After a further period of surveillance and monitoring, and provided that the additional surveillance and monitoring find no evidence of infection, a jurisdiction, in consultation with the CCEAD, could lift

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14 The minimum period uses, or is based on, the disease-specific incubation periods defined by the OIE — two incubation periods is a common guideline.
the CA. This would result in the lifting of all the remaining regulatory controls associated with the response, and a return to business as usual.
6 Quarantine and movement controls

6.1 General principles

The principles for the recommended quarantine practices and movement controls are as follows:

- Containment and eradication of African swine fever (ASF) is the highest priority. Therefore, ‘normal business movements’ are not allowed.
- Live animals pose the greatest risk of disease spread; therefore, their movements from all premises within the restricted area (RA) and control area (CA) must be strictly controlled.
- The outside area (OA) should remain as ‘clean’ as possible. Therefore, movement of animals from the RA to the OA is prohibited, and movement of products is generally prohibited. Movement of animals and products from the CA to the OA will also be restricted.
- Trace premises (TP) and suspect premises (SP) are temporary classifications, and every effort should be made to resolve the status of these premises as soon as possible.
- The numbers of susceptible animals within the RA should be minimised. Therefore, movements of animals into the RA will be limited and usually for slaughter only.
- Movement restrictions are more stringent within the RA than within the CA, and will be more stringent in the early stages of the response.
- Movement controls may be varied during a response from those listed here. However, this will involve a variation to the agreed Emergency Animal Disease Response Plan, with endorsement by the Consultative Committee on Emergency Animal Diseases (CCEAD) and the National Management Group (NMG).
- Recommended movement controls apply to any movement off a premises, whether on foot or by vehicle, that involves either public or private land.

6.2 Guidelines for issuing permits

When assessing risk for the purposes of issuing a permit, the elements to consider may include:

- sources of risk
  - species of animal
  - type of product
  - presence of disease agent on both the originating and destination premises
  - current vector activity, if relevant
  - organisation and management issues (ie confidence in animal tracing and surveillance, biosecurity)
  - proposed use of the animals or products
  - proposed transport route
  - vaccination status of the animals (if relevant)
  - treatment of animals and vehicles to prevent concurrent movement of vectors, if relevant
  - security of transport
  - security and monitoring at the destination
  - environment and natural events
  - community and human behaviour
  - risk of sabotage
  - technology
• regulations and standards
• available resources for compliance and enforcement

• areas of impact
  • livestock health (health of affected species, including animal welfare)
  • human health (including work health and safety)
  • trade and economic impacts (including commercial and legal impacts)
  • environmental impacts
  • organisational capacity
  • political impacts
  • reputation and image

• proposed risk treatment measures
  • vaccination
  • processing of product
  • disinfection or other treatment of animals, vehicles and fomites
  • vector control, if relevant
  • security
  • communication.

### 6.3 Types of permits

Permits are either general or special. They are legal documents that describe the animal(s), commodities or things to be moved, the origin and destination, and the conditions to be met for the movement. Either type of permit may include conditions. Once permit conditions have been agreed from an operational perspective, all permit conditions must be met for every permit. Both general and special permits may be in addition to documents required for routine movements between or within jurisdictions (e.g., health certificates, waybills, consignment notes, National Vendor Declarations).

#### 6.3.1 General permit

General permits (GPs) are used for lower risk movements, and create a record of each movement to which they apply. They are granted without the need for direct interaction between the person moving the animal(s), commodity or thing and a government veterinarian or gazetted inspector of stock. The permit may be completed via a webpage or in an approved place (such as a government office or commercial premises). A printed version of the permit must accompany the movement. The permit may impose preconditions and/or restrictions on movements. GPs may not be available until the relevant chief veterinary officer (CVO) gives approval for general movements, and this may not be available in the early stages of a response.

#### 6.3.2 Special permit

Special permits (SpPs) are issued by the relevant government veterinarian or gazetted inspector of stock. They are used for higher risk movements, and therefore require formal application and individual risk assessment. SpPs describe the requirements for movement of an animal (or group of animals), commodity or thing, for which a specific assessment has been conducted by the relevant
government veterinarian or gazetted inspector of stock. A printed version of the permit must accompany the movement. The permit may impose preconditions and/or restrictions on movements.

**Emergency permit**

An emergency permit is a special permit that specifies strict legal requirements for an otherwise high-risk movement of an animal, to enable emergency veterinary treatment to be delivered, to enable animals to be moved for animal welfare reasons, or to enable any other emergency movement under exceptional circumstances. These permits are issued on a case-by-case basis under the authorisation of the relevant CVO.

### 6.4 Recommended quarantine practices and movement controls

Movement controls and quarantine will be imposed as quickly as possible on all premises and areas on which ASF infection is either known or suspected. Movement controls will apply to anything that may have become contaminated with ASF virus.

Infected premises (IPs), dangerous contact premises (DCPs) and SPs will be declared.

Movement controls both into and out of the premises will apply to all animals, people, products and fomites. Since ASF virus is not transmitted from farm to farm by wind, preventing the movement of suspect animals, people and materials will contain the disease. It may be several weeks before there can be any confidence that no pigs on other properties in an area are incubating the disease, and quarantine measures will be maintained during this time.

Product from IPs will be destroyed and disposed of in a safe manner, preferably by burial on the IP.

An RA and CA will be declared around the IP. Declaration of these areas assists in preventing disease spread, by restricting movement onto and off the premises that are most likely to have had direct or indirect contact with the IPs.

An RA may also be declared around an infected feral pig population so that suitable controls can be implemented.

#### 6.4.1 Live susceptible animals

Table 6.1 describes the recommended movement controls for live pigs within and between declared areas.
### Table 6.1  Recommended movements controls for live pigs

<table>
<thead>
<tr>
<th>To→</th>
<th>From</th>
<th>RA IP/DCP/SP/TP</th>
<th>CA ARP/DCPF/APF</th>
<th>OA SP/TP</th>
<th>POR</th>
<th>OA POR</th>
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<tr>
<td>CA</td>
<td>SP/TP</td>
<td>Prohibited</td>
<td>Prohibited</td>
<td>Prohibited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POR</td>
<td>Prohibited</td>
<td>Prohibited, except under SpP2</td>
<td>Prohibited</td>
<td>Prohibited, except under GP1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OA</td>
<td>Prohibited</td>
<td>Prohibited, except under SpP2</td>
<td>Prohibited</td>
<td>Prohibited, except under GP1</td>
<td>Allowed under normal jurisdictional requirements</td>
<td></td>
</tr>
</tbody>
</table>

APF = approved processing facility; ARP = at-risk premises; CA = control area; DCP = dangerous contact premises; DCPF = dangerous contact processing facility; GP = general permit; IP = infected premises; OA = outside area; POR = premises of relevance; RA = restricted area; SP = suspect premises; SpP = special permit; TP = trace premises

**Notes for Table 6.1**

**SpP1 conditions:**
- With CVO approval, emergency permit for exceptional circumstances only (primarily for welfare reasons) after a risk assessment indicates that the risk associated with movement is acceptable within the response.
- For slaughter, or to an at-risk premises (ARP) for other purposes.
- Travel by approved routes only and no stopping en route.
- Appropriate biosecurity standard at receiving premises.
- Appropriate decontamination of equipment and vehicles.
- Absence of clinical signs in all animals on the property before and on the day of travel.
- Single consignment per load.
- Any suspect clinical signs are immediately reported to the local control centre (LCC) or state coordination centre (SCC).
- Physical identification of individual animals (eg ear tag, brand) with accompanying movement documentation (eg National Vendor Declaration — NVD, waybill, PigPass).

**SpP2 conditions:**
- For slaughter only, if the RA contains the only available abattoir.
- Travel by approved routes only and no stopping en route.
- Appropriate biosecurity standard at receiving premises.
- Appropriate decontamination of equipment and vehicles.
- Absence of clinical signs in all animals on the property before and on the day of travel.
- Single consignment per load.
- Any suspect clinical signs are immediately reported to the LCC or SCC.
- Physical identification of individual animals (e.g., ear tag, brand) with accompanying movement documentation (e.g., NVD, waybill, PigPass).

GP1 conditions:
- For slaughter, movement within an approved compartment or movement to other premises of relevance (PORs).
- Travel by approved routes only and no stopping en route.
- Appropriate decontamination of equipment and vehicles.
- Absence of clinical signs in all animals on the property before and on the day of travel.
- Physical identification of individual animals (e.g., ear tag, brand) with accompanying movement documentation (e.g., NVD, waybill, PigPass).

### 6.4.2 Semen and embryos from live susceptible animals

**Pig semen**

Since ASF is transmitted by semen, movement of semen from high-risk premises and out of the RA will be prohibited. To enable business continuity, semen sourced from properties in the CA and OA can be moved into the RA and CA under permit. However, since pigs on IPs and DCPs will be slaughtered, movement of semen onto IPs or DCPs (as well as onto SPs and TPs) is prohibited.

Table 6.2 describes the recommended movement controls for pig semen within and between declared areas.

**Table 6.2  Recommended movement controls for pig semen**

<table>
<thead>
<tr>
<th>To→</th>
<th>RA</th>
<th>CA</th>
<th>OA</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>IP/DCP/SP/TP</td>
<td>ARP</td>
<td>SP/TP</td>
</tr>
<tr>
<td>RA</td>
<td>Prohibited</td>
<td>Prohibited</td>
<td>Prohibited</td>
</tr>
<tr>
<td>ARP</td>
<td>Prohibited</td>
<td>Prohibited</td>
<td>Prohibited</td>
</tr>
<tr>
<td>CA</td>
<td>Prohibited</td>
<td>Prohibited, except under SpP3</td>
<td>Prohibited, except under SpP3</td>
</tr>
<tr>
<td>POR</td>
<td>Prohibited</td>
<td>Prohibited, except under SpP3</td>
<td>Prohibited, except under SpP3</td>
</tr>
<tr>
<td>OA</td>
<td>Prohibited</td>
<td>Prohibited, except under GP2</td>
<td>Prohibited, except under GP2</td>
</tr>
</tbody>
</table>

ARP = at-risk premises; CA = control area; DCP = dangerous contact premises; GP = general permit; IP = infected premises; OA = outside area; POR = premises of relevance; RA = restricted area; SP = suspect premises; SpP = special permit; TP = trace premises
Notes for Table 6.2

SpP3 conditions:

- Evidence of an operational biosecurity manual, including maintenance of biosecurity procedures, accurate record keeping, and semen containers being adequately cleaned and biosecure.
- Absence of clinical signs in all animals on the property before and on the day of collection and since that time.

GP2 conditions:

- Evidence of an operational biosecurity manual, including maintenance of biosecurity procedures, accurate record keeping, and semen containers being adequately cleaned and biosecure.
- Absence of clinical signs in all animals on the property before and on the day of collection and since that time.
- Accurate record keeping of all semen movements off the property.

Pig embryos

The International Embryo Transfer Society (IETS) has indicated that there is not enough information to reach a conclusion regarding the risk of transmission of ASF virus via embryos.

Movements of pig embryos within the OA (ie OA to OA) are allowed. Movements of pig embryos within the RA are prohibited. Movements of pig embryos within the CA must be under a GP (GP3) with the following conditions.

GP3 conditions:

- Embryos collected and handled in accordance with procedures detailed in the current edition of the IETS manual.
- Absence of clinical signs in all animals on the property before and on the day of collection and since that time.
- Accurate record keeping of all embryo movements off the property.
- Evidence of an operational biosecurity manual, including maintenance of biosecurity procedures.

6.4.3 Meat and meat products

The risks from pigmeat and offal are addressed primarily through the movement controls on live pigs going to slaughter and the fact that swill feeding is illegal in all jurisdictions. Because ASF is not a zoonosis, disease concerns are mainly limited to ASF in pigs arising from the diversion of pigmeat or offal for pig feed. As well, many other products from pigs, such as heart valves, uteruses and ears, are sold from pig abattoirs. The movement of these miscellaneous products should be considered on a case-by-case basis following a risk assessment that takes into consideration the destination, product type and end use.

Table 6.3 describes the recommended movement controls for fresh or frozen pigmeat and offal within and between declared areas.
Table 6.3  Recommended movement controls for fresh/frozen pigmeat and offal

<table>
<thead>
<tr>
<th>To→ From</th>
<th>RA</th>
<th>CA</th>
<th>OA</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>Prohibited, except under SpP4</td>
<td>Prohibited, except under SpP4</td>
<td>Prohibited</td>
</tr>
<tr>
<td>CA</td>
<td>Prohibited, except under GP4</td>
<td>Prohibited, except under GP4</td>
<td>Prohibited</td>
</tr>
<tr>
<td>OA</td>
<td>Allowed under normal jurisdictional requirements</td>
<td>Allowed under normal jurisdictional requirements</td>
<td>Allowed under normal jurisdictional requirements</td>
</tr>
</tbody>
</table>

CA = control area; GP = general permit; OA = outside area; RA = restricted area; SpP = special permit

Notes for Table 6.3

SpP4 conditions:
- For disposal.
- Biosecure transport to an approved disposal or rendering facility, or biosecure disposal on-site and transport by approved routes only.
- The material is not brought into direct or indirect contact with susceptible animals.
- Every precaution is taken to ensure that effluent, other fluids or aerosols do not leak out of the transport vehicle.
- Transport vehicles and containers are decontaminated under supervision between loads.

GP4 conditions:
- The material is not brought into direct or indirect contact with susceptible animals.
- Every precaution is taken to ensure that effluent, other fluids or aerosols do not leak out of the transport vehicle.
- Transport vehicles and containers are decontaminated under supervision between loads

6.4.4 Waste products and effluent

Pig effluent can transmit ASF virus, and the virus persists in the environment; therefore, movement of piggery wastes from high-risk premises and out of the RA is generally prohibited. However, movement of piggery wastes from IPs may be allowed under permit (SpP5) and after depopulation, to properties in the RA without susceptible livestock (zero susceptible species premises — ZPs).

Table 6.4 describes the recommended movement controls for waste products and effluent, including offal not for human consumption, within and between areas.
### Table 6.4  Recommended movement controls for waste products and effluent, including offal not for human consumption

<table>
<thead>
<tr>
<th>To→From</th>
<th>RA</th>
<th>CA</th>
<th>OA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IP/DCP/SP/TP</td>
<td>ZP/disposal facility</td>
<td>SP/TP/POR</td>
</tr>
<tr>
<td>RA</td>
<td>Prohibited</td>
<td>Prohibited, except under SpP5</td>
<td>Prohibited</td>
</tr>
<tr>
<td></td>
<td>SP/TP</td>
<td>Prohibited</td>
<td>Prohibited</td>
</tr>
<tr>
<td></td>
<td>ARP</td>
<td>Prohibited</td>
<td>Prohibited</td>
</tr>
<tr>
<td>CA</td>
<td>Prohibited</td>
<td>Prohibited</td>
<td>Prohibited</td>
</tr>
<tr>
<td></td>
<td>SP/TP</td>
<td>Prohibited</td>
<td>Prohibited, except under GP5</td>
</tr>
<tr>
<td></td>
<td>POR</td>
<td>Prohibited</td>
<td>Prohibited</td>
</tr>
<tr>
<td>OA</td>
<td>Prohibited</td>
<td>Allowed under normal jurisdictional requirements</td>
<td>Allowed under normal jurisdictional requirements</td>
</tr>
</tbody>
</table>

ARP = at-risk premises; CA = control area; DCP = dangerous contact premises; GP = general permit; IP = infected premises, OA = outside area; POR = premises of relevance; RA = restricted area; SP = suspect premises; SpP = special permit; TP = trace premises; ZP = zero susceptible species premises

**Notes for Table 6.4**

**SpP5 conditions:**
- From IPs, after a minimum of 30 days following depopulation.
- Must be treated to inactivate virus before movement.
- The material is not brought into direct or indirect contact with susceptible livestock.
- Travel by approved routes only.
- Every precaution is taken to ensure that effluent, other fluids or aerosols do not leak out of the transport vehicle.
- Transport vehicles and containers are decontaminated under supervision between loads.

**GP5 conditions:**
- The material is not brought into direct or indirect contact with susceptible livestock.
- Every precaution is taken to ensure that effluent, other fluids or aerosols do not leak out of the transport vehicle.
- Transport vehicles and containers are decontaminated under supervision between loads.

#### 6.4.5 Empty livestock transport vehicles and associated equipment

Because the survival time for ASF virus in organic matter can be prolonged, vehicles that have been used to transport live pigs, and equipment used with live pigs or their products must be thoroughly cleaned after use.
For movement within RAs of vehicles and equipment that have had direct contact with pigs or their products, and movement of these vehicles and equipment from RAs to CAs or the OA, an SpP (SpP6) with the following conditions should be obtained.

SpP6 conditions:

- Vehicles and equipment are appropriately decontaminated before and after use at an appropriate site (e.g., truck wash-down facility at an abattoir). It should be ensured that vehicles and equipment have adequate contact time with the relevant disinfectant before use, and runoff from the decontamination sites needs to be managed (refer to the Decontamination Manual for disinfectant information, adequate contact times and management of runoff).
- On leaving higher risk premises or the RA, all vehicles are subject to inspection and/or appropriate decontamination.

For movements within CAs of vehicles or equipment that have had direct contact with pigs or their products, and movements of these vehicles and equipment from the CA to the OA, a GP (GP6) with the following conditions should be obtained.

GP6 conditions:

- Vehicles and equipment are appropriately decontaminated before and after use at an appropriate site (e.g., truck wash-down facility at an abattoir). It should be ensured that vehicles and equipment have adequate contact time with the relevant disinfectant before use, and runoff from the decontamination sites needs to be managed. Decontamination sites for vehicles should have sufficient equipment, water supply, drainage and materials to decontaminate the expected number of vehicles. Further information on decontamination procedures and site preparation is available in the Decontamination Manual and nationally agreed standard operating procedure (NASOP) 12: Decontamination of large equipment.\(^\text{15}\)

6.4.6 People and nonsusceptible animals

Movements of people and nonsusceptible animals off IPs, DCPs, SPs and TPs will be restricted and subject to appropriate decontamination procedures to prevent mechanical spread of ASF. Within the RA, people who regularly travel from farm to farm and come into contact with pigs will be required to undergo appropriate decontamination of themselves, and their overgear, equipment and vehicles between properties, and keep detailed records of their movements. Unnecessary movements of people and nonsusceptible animals onto and off premises in the RA should be discouraged.

Further information is available in NASOP 01: Personal decontamination — entry and exit procedures and NASOP 26: Decontamination of groups of people — entry and exit procedures.\(^\text{16}\)

6.4.7 Crops, grains, hay, silage and mixed feeds

Crops, grains, hay and silage harvested from paddocks that were sprayed or treated with effluent on an IP or DCP within the 60 days before the first signs of ASF, or mixed feeds made from such constituents, are not permitted to be moved off-site. Other crops and grains may be moved from IPs and DCPs after decontamination of the material, and moved to premises in the RA or CA, provided that the vehicle movement requirements are observed. Crops and grains may be moved, without


decontamination, from lower risk premises within the RA or CA to other premises in the RA or CA, provided that the vehicle movement requirements are observed.

Movement of feed onto IPs and DCPs may be necessary for animal welfare reasons; these movements would be permitted from low-risk premises or premises in the OA, provided that the vehicle movement requirements are observed.
7 Procedures for surveillance and proof of freedom

Proof of freedom

Following an outbreak of African swine fever (ASF), surveillance will be required to demonstrate that infection has been eradicated from the population and enable any remaining movement restrictions to be lifted within the country, zone or compartment. Proof of freedom will also be needed to satisfy trading partners and regain access to international markets.

The World Organisation for Animal Health (OIE) Terrestrial Animal Health Code 2014 (Article 15.1.4) lists the criteria for a previously ASF-free country or zone to be recognised as free from ASF following an outbreak. Reinstatement of Australia's official ASF-free status would be on the basis of self-declaration to the OIE, as per Article 1.6.1 of the Terrestrial Code 2014.

However, although the OIE provides guidelines for recovering ASF-free status, acceptance of ASF-free status following an outbreak will most likely have to be negotiated with individual trading partners and may take considerably longer than the minimum periods prescribed in the Terrestrial Code. A key requirement for the OIE and trading partners will be evidence of an effective surveillance program capable of detecting infection if present in the population, and analysis of data to support the case for disease freedom. Descriptions of Australia's veterinary services, demographics of susceptible populations and relevant industry structures should be included to justify the design of the surveillance program.

Principles for designing a post-outbreak surveillance program

To provide confidence that ASF is no longer circulating within the country, zone or compartment, a comprehensive surveillance program will be required. This will need to be carefully designed and followed to ensure that it produces sufficient data that are reliable and acceptable to the OIE and international trading partners, while avoiding a program that is excessively costly and logistically complicated. The surveillance program will build on surveillance, tracing and diagnostic testing done during the control phase. The post-outbreak surveillance program should include clinical and serological surveillance, and targeted and random components.

In determining an effective but efficient program to prove freedom after an outbreak, the following elements should be considered:

- The populations of pigs in the area. Pigs within the restricted, control and outside areas should, if possible, be classified into discrete populations for the purposes of surveillance. For example, feral pigs located within a state forest would be one population, ‘fringe’ piggeries may be another, and intensive piggeries would usually be treated as discrete units.
- The number of properties detected as infected during the outbreak, and the degree of spread this indicates.
- The estimated time that ASF virus could have been present in Australia.
- The movement of pigs and pig products between pig populations that have been recorded on the relevant information management system during the outbreak. Special attention must be given to examining swill-feeding activities.
- High-risk herds should be specifically targeted for sampling. These include herds that use pig abattoir workers and pig transport drivers, and herds that buy animals at saleyards.
- The incubation period of ASF.
- The accuracy, cost and availability of laboratory tests to examine a large number of animals.
The resources available to undertake surveillance testing. However, limited resources should not compromise achieving a scientifically acceptable result. For example, savings may be accomplished by

- collecting material from abattoirs, even though material can only be selected from specific age groups
- organising the program over a longer period.

All these factors will influence the statistically acceptable sample size for testing required for Australia to claim freedom from disease. Clearly, the pattern and timing of testing will depend on the specific circumstances, but should aim at expanding the free area. According to the OIE Terrestrial Code 2014:

- an 'infected zone' will not be considered free until at least 3 months after the last case where a stamping-out policy is practised
- where ticks are suspected to be involved in the epidemiology of the infection, this period must be followed by acaricide treatment and the use of sentinel pigs
- surveillance for ASF in feral pigs is necessary to demonstrate the absence of ASF.
# 8 Glossary

## 8.1 Disease-specific terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyanosis (adj. cyanotic)</td>
<td>Blueness of the skin and/or mucous membranes due to insufficient oxygenation of the blood.</td>
</tr>
<tr>
<td>Hyperaemia</td>
<td>An increase in the amount of blood in a tissue or organ due to dilation of the supplying arteries.</td>
</tr>
<tr>
<td>Petechiae</td>
<td>Tiny, flat red or purple spots in the skin or mucous membrane caused by bleeding from small blood vessels.</td>
</tr>
<tr>
<td>Rendering</td>
<td>Processing by heat to inactivate infective agents. Rendered material may be used in various products according to particular disease circumstances.</td>
</tr>
</tbody>
</table>

## 8.2 Standard AUSVETPLAN terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal byproducts</td>
<td>Products of animal origin that are not for consumption but are destined for industrial use (eg hides and skins, fur, wool, hair, feathers, hooves, bones, fertiliser).</td>
</tr>
<tr>
<td>Animal Health Committee</td>
<td>A committee whose members are the Australian and state and territory CVOs, the Director of the CSIRO Australian Animal Health Laboratory, and the Director of Environmental Biosecurity in the Australian Government Department of the Environment. The committee provides advice to the National Biosecurity Committee on animal health matters, focusing on technical issues and regulatory policy (formerly called the Veterinary Committee). See also National Biosecurity Committee</td>
</tr>
<tr>
<td>Animal products</td>
<td>Meat, meat products and other products of animal origin (eg eggs, milk) for human consumption or for use in animal feedstuff.</td>
</tr>
<tr>
<td>Approved processing facility (APF)</td>
<td>An abattoir, knackery, milk processing plant or other such facility that maintains increased biosecurity standards. Such a facility could have animals or animal products introduced from lower risk premises under a permit for processing to an approved standard.</td>
</tr>
<tr>
<td>At-risk premises (ARP)</td>
<td>A premises in a restricted area that contains a live susceptible animal(s) but is not considered at the time of classification to be an infected premises, dangerous contact premises, dangerous contact processing facility, suspect premises or trace premises.</td>
</tr>
<tr>
<td>Australian Chief Veterinary Officer</td>
<td>The nominated senior veterinarian in the Australian Government Department of Agriculture and Water Resources who manages international animal health commitments and the Australian Government’s response to an animal disease outbreak. See also Chief veterinary officer</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>AUSVETPLAN</td>
<td><em>Australian Veterinary Emergency Plan.</em> A series of technical response plans that describe the proposed Australian approach to an emergency animal disease incident. The documents provide guidance based on sound analysis, linking policy, strategies, implementation, coordination and emergency-management plans.</td>
</tr>
<tr>
<td>Chief veterinary officer (CVO)</td>
<td>The senior veterinarian of the animal health authority in each jurisdiction (national, state or territory) who has responsibility for animal disease control in that jurisdiction. <em>See also</em> Australian Chief Veterinary Officer</td>
</tr>
<tr>
<td>Compartmentalisation</td>
<td>The process of defining, implementing and maintaining one or more disease-free establishments under a common biosecurity management system in accordance with OIE guidelines, based on applied biosecurity measures and surveillance, in order to facilitate disease control and/or trade.</td>
</tr>
<tr>
<td>Compensation</td>
<td>The sum of money paid by government to an owner for livestock or property that are destroyed for the purpose of eradication or prevention of the spread of an emergency animal disease, and livestock that have died of the emergency animal disease. <em>See also</em> Cost-sharing arrangements, Emergency Animal Disease Response Agreement</td>
</tr>
<tr>
<td>Consultative Committee on Emergency Animal Diseases (CCEAD)</td>
<td>The key technical coordinating body for animal health emergencies. Members are state and territory CVOs, representatives of CSIRO-AAHL and the relevant industries, and the Australian CVO as chair.</td>
</tr>
<tr>
<td>Control area (CA)</td>
<td>A legally declared area where the disease controls, including surveillance and movement controls, applied are of lesser intensity than those in a restricted area (the limits of a control area and the conditions applying to it can be varied during an incident according to need).</td>
</tr>
<tr>
<td>Cost-sharing arrangements</td>
<td>Arrangements agreed between governments (national and states/territories) and livestock industries for sharing the costs of emergency animal disease responses. <em>See also</em> Compensation, Emergency Animal Disease Response Agreement</td>
</tr>
<tr>
<td>Dangerous contact animal</td>
<td>A susceptible animal that has been designated as being exposed to other infected animals or potentially infectious products following tracing and epidemiological investigation.</td>
</tr>
<tr>
<td>Dangerous contact premises (DCP)</td>
<td>A premises, apart from an abattoir, knackery or milk processing plant (or other such facility), that, after investigation and based on a risk assessment, is considered to contain a susceptible animal(s) not showing clinical signs, but considered highly likely to contain an infected animal(s) and/or contaminated animal products, wastes or things that present an unacceptable risk to the response if the risk is not addressed, and that therefore requires action to address the risk.</td>
</tr>
<tr>
<td>Dangerous contact processing facility (DCPF)</td>
<td>An abattoir, knackery, milk processing plant or other such facility that, based on a risk assessment, appears highly likely to have received infected animals, or contaminated animal products, wastes or things, and that requires action to address the risk.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared area</td>
<td>A defined tract of land that is subjected to disease control restrictions under emergency animal disease legislation. There are two types of declared areas: restricted area and control area.</td>
</tr>
<tr>
<td>Decontamination</td>
<td>Includes all stages of cleaning and disinfection.</td>
</tr>
<tr>
<td>Depopulation</td>
<td>The removal of a host population from a particular area to control or prevent the spread of disease.</td>
</tr>
<tr>
<td>Destroy (animals)</td>
<td>To kill animals humanely.</td>
</tr>
<tr>
<td>Disease agent</td>
<td>A general term for a transmissible organism or other factor that causes an infectious disease.</td>
</tr>
<tr>
<td>Disease Watch Hotline</td>
<td>24-hour freecall service for reporting suspected incidences of exotic diseases — 1800 675 888.</td>
</tr>
<tr>
<td>Disinfectant</td>
<td>A chemical used to destroy disease agents outside a living animal.</td>
</tr>
<tr>
<td>Disinfection</td>
<td>The application, after thorough cleansing, of procedures intended to destroy the infectious or parasitic agents of animal diseases, including zoonoses; applies to premises, vehicles and different objects that may have been directly or indirectly contaminated.</td>
</tr>
<tr>
<td>Disinsectisation</td>
<td>The destruction of insect pests, usually with a chemical agent.</td>
</tr>
<tr>
<td>Disposal</td>
<td>Sanitary removal of animal carcasses, animal products, materials and wastes by burial, burning or some other process so as to prevent the spread of disease.</td>
</tr>
<tr>
<td>Emergency animal disease</td>
<td>A disease that is (a) exotic to Australia or (b) a variant of an endemic disease or (c) a serious infectious disease of unknown or uncertain cause or (d) a severe outbreak of a known endemic disease, and that is considered to be of national significance with serious social or trade implications. See also Endemic animal disease, Exotic animal disease</td>
</tr>
<tr>
<td>Emergency Animal Disease Response Agreement</td>
<td>Agreement between the Australian and state/territory governments and livestock industries on the management of emergency animal disease responses. Provisions include participatory decision making, risk management, cost sharing, the use of appropriately trained personnel and existing standards such as AUSVETPLAN. See also Compensation, Cost-sharing arrangements</td>
</tr>
<tr>
<td>Endemic animal disease</td>
<td>A disease affecting animals (which may include humans) that is known to occur in Australia. See also Emergency animal disease, Exotic animal disease</td>
</tr>
<tr>
<td>Enterprise</td>
<td>See Risk enterprise</td>
</tr>
<tr>
<td>Enzyme-linked immunosorbent assay (ELISA)</td>
<td>A serological test designed to detect and measure the presence of antibody or antigen in a sample. The test uses an enzyme reaction with a substrate to produce a colour change when antigen–antibody binding occurs.</td>
</tr>
</tbody>
</table>

**African swine fever (Version 4.1)**

55
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
</table>
| Epidemiological investigation            | An investigation to identify and qualify the risk factors associated with the disease.  
*See also* Veterinary investigation                                                        |
| Epidemiology                             | The study of disease in populations and of factors that determine its occurrence.                                                                                                                        |
| Exotic animal disease                    | A disease affecting animals (which may include humans) that does not normally occur in Australia.  
*See also* Emergency animal disease, Endemic animal disease                                    |
| Exotic fauna/feral animals               | See Wild animals                                                                                                                                                                                           |
| Fomites                                  | Inanimate objects (eg boots, clothing, equipment, instruments, vehicles, crates, packaging) that can carry an infectious disease agent and may spread the disease through mechanical transmission. |
| General permit                           | A legal document that describes the requirements for movement of an animal (or group of animals), commodity or thing, for which permission may be granted without the need for direct interaction between the person moving the animal(s), commodity or thing and a government veterinarian or inspector. The permit may be completed via a webpage or in an approved place (such as a government office or commercial premises). A printed version of the permit must accompany the movement. The permit may impose preconditions and/or restrictions on movements.  
*See also* Special permit                                                                 |
| In-contact animals                       | Animals that have had close contact with infected animals, such as noninfected animals in the same group as infected animals.                                                                             |
| Incubation period                        | The period that elapses between the introduction of the pathogen into the animal and the first clinical signs of the disease.                                                                              |
| Index case                               | The first case of the disease to be diagnosed in a disease outbreak.  
*See also* Index property                                                                    |
| Index property                           | The property on which the index case is found.  
*See also* Index case                                                                          |
| Infected premises (IP)                   | A defined area (which may be all or part of a property) on which animals meeting the case definition are or were present, or the causative agent of the emergency animal disease is present, or there is a reasonable suspicion that either is present, and that the relevant chief veterinary officer or their delegate has declared to be an infected premises. |
| Local control centre (LCC)               | An emergency operations centre responsible for the command and control of field operations in a defined area.                                                                                         |
| Monitoring                               | Routine collection of data for assessing the health status of a population or the level of contamination of a site for remediation purposes.  
*See also* Surveillance                                                                      |
<p>| Movement control                         | Restrictions placed on the movement of animals, people and other things to prevent the spread of disease.                                                                                               |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Biosecurity Committee (NBC)</td>
<td>The NBC was formally established under the Intergovernmental Agreement on Biosecurity (IGAB). The IGAB was signed on 13 January 2012, and signatories include all states and territories except Tasmania. The NBC provides advice to the Agriculture Senior Officials Committee and the Agriculture Ministers' Forum on national biosecurity issues, and on the IGAB.</td>
</tr>
<tr>
<td>National management group (NMG)</td>
<td>A group established to approve (or not approve) the invoking of cost sharing under the Emergency Animal Disease Response Agreement. NMG members are the Secretary of the Australian Government Department of Agriculture and Water Resources as chair, the chief executive officers of the state and territory government parties, and the president (or analogous officer) of each of the relevant industry parties.</td>
</tr>
<tr>
<td>Native wildlife</td>
<td>See Wild animals</td>
</tr>
<tr>
<td>Operational procedures</td>
<td>Detailed instructions for carrying out specific disease control activities, such as disposal, destruction, decontamination and valuation.</td>
</tr>
<tr>
<td>Outside area (OA)</td>
<td>The area of Australia outside the declared (control and restricted) areas.</td>
</tr>
<tr>
<td>Owner</td>
<td>Person responsible for a premises (includes an agent of the owner, such as a manager or other controlling officer).</td>
</tr>
<tr>
<td>Polymerase chain reaction (PCR)</td>
<td>A method of amplifying and analysing DNA sequences that can be used to detect the presence of viral DNA.</td>
</tr>
<tr>
<td>Premises</td>
<td>A tract of land including its buildings, or a separate farm or facility that is maintained by a single set of services and personnel.</td>
</tr>
<tr>
<td>Premises of relevance (POR)</td>
<td>A premises in a control area that contains a live susceptible animal(s) but is considered at the time of classification not to be an infected premises, suspect premises, trace premises, dangerous contact premises or dangerous contact processing facility.</td>
</tr>
<tr>
<td>Prevalence</td>
<td>The proportion (or percentage) of animals in a particular population affected by a particular disease (or infection or positive antibody titre) at a given point in time.</td>
</tr>
<tr>
<td>Primary case</td>
<td>The first actual case of the disease.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>Quarantine</td>
<td>Legal restrictions imposed on a place or a tract of land by the serving of a notice limiting access or egress of specified animals, persons or things.</td>
</tr>
<tr>
<td>Resolved premises (RP)</td>
<td>An infected premises, dangerous contact premises or dangerous contact processing facility that has completed the required control measures and is subject to the procedures and restrictions appropriate to the area in which it is located.</td>
</tr>
<tr>
<td>Restricted area (RA)</td>
<td>A relatively small legally declared area around infected premises and dangerous contact premises that is subject to disease controls, including intense surveillance and movement controls.</td>
</tr>
<tr>
<td>Risk enterprise</td>
<td>A defined livestock or related enterprise that is potentially a major source of infection for many other premises. Includes intensive piggeries, feedlots, abattoirs, knackeries, saleyards, calf scales, milk factories, tanneries, skin sheds, game meat establishments, cold stores, artificial insemination centres, veterinary laboratories and hospitals, road and rail freight depots, showgrounds, field days, weighbridges, garbage depots.</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>The proportion of truly positive units that are correctly identified as positive by a test. See also Specificity</td>
</tr>
<tr>
<td>Sentinel animal</td>
<td>Animal of known health status that is monitored to detect the presence of a specific disease agent.</td>
</tr>
<tr>
<td>Seroconversion</td>
<td>The appearance in the blood serum of antibodies (as determined by a serology test) following vaccination or natural exposure to a disease agent.</td>
</tr>
<tr>
<td>Serosurveillance</td>
<td>Surveillance of an animal population by testing serum samples for the presence of antibodies to disease agents.</td>
</tr>
<tr>
<td>Serotype</td>
<td>A subgroup of microorganisms identified by the antigens carried (as determined by a serology test).</td>
</tr>
<tr>
<td>Serum neutralisation test</td>
<td>A serological test to detect and measure the presence of antibody in a sample. Antibody in serum is serially diluted to detect the highest dilution that neutralises a standard amount of antigen. The neutralising antibody titre is given as the reciprocal of this dilution.</td>
</tr>
<tr>
<td>Slaughter</td>
<td>The humane killing of an animal for meat for human consumption.</td>
</tr>
<tr>
<td>Special permit</td>
<td>A legal document that describes the requirements for movement of an animal (or group of animals), commodity or thing, for which the person moving the animal(s), commodity or thing must obtain prior written permission from the relevant government veterinarian or inspector. A printed version of the permit must accompany the movement. The permit may impose preconditions and/or restrictions on movements. See also General permit</td>
</tr>
<tr>
<td>Specificity</td>
<td>The proportion of truly negative units that are correctly identified as negative by a test. See also Sensitivity</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>Stamping out</td>
<td>The strategy of eliminating infection from premises through the destruction of animals in accordance with the particular AUSVETPLAN manual, and in a manner that permits appropriate disposal of carcasses and decontamination of the site.</td>
</tr>
<tr>
<td>State coordination centre (SCC)</td>
<td>The emergency operations centre that directs the disease control operations to be undertaken in that state or territory.</td>
</tr>
<tr>
<td>Surveillance</td>
<td>A systematic program of investigation designed to establish the presence, extent or absence of a disease, or of infection or contamination with the causative organism. It includes the examination of animals for clinical signs, antibodies or the causative organism.</td>
</tr>
<tr>
<td>Susceptible animals</td>
<td>Animals that can be infected with a particular disease.</td>
</tr>
</tbody>
</table>
| Suspect animal                            | An animal that may have been exposed to an emergency disease such that its quarantine and intensive surveillance, but not pre-emptive slaughter, is warranted.  
                                                         or  
                                                         An animal not known to have been exposed to a disease agent but showing clinical signs requiring differential diagnosis. |
| Suspect premises (SP)                      | Temporary classification of a premises that contains a susceptible animal(s) not known to have been exposed to the disease agent but showing clinical signs similar to the case definition, and that therefore requires investigation(s). |
| Swill                                     | Also known as 'prohibited pig feed', material of mammalian origin, or any substance that has come in contact with this material; it does not include:  
                                                         - milk, milk products or milk byproducts, either of Australian provenance or legally imported for stockfeed use into Australia  
                                                         - material containing flesh, bones, blood, offal or mammal carcases that is treated by an approved process\(^\text{17}\)  
                                                         - a carcass or part of a domestic pig, born and raised on the property on which the pig or pigs that are administered the part are held, that is administered for therapeutic purposes in accordance with the written instructions of a veterinary practitioner  
                                                         - material used under an individual and defined-period permit issued by a jurisdiction for the purposes of research or baiting.  

This definition was endorsed by the Agricultural Ministers’ Council through AGMIN OOS 04/2014.  

\(^{17}\) Refer to jurisdictional legislation for approved processes. Jurisdictions may have approved processes that meet the following minimum standards: rendering in accordance with the Australian Standard for the Hygienic Rendering of Animal Products; under jurisdictional permit, cooking processes subject to compliance verification that ensure that an internal temperature of at least 70 °C for a minimum of 30 minutes, or equivalent, has been reached; treatment of cooking oil that has been used for cooking in Australia in accordance with the National Standard for Recycling of Used Cooking Fats and Oils Intended for Animal Feeds; under jurisdictional permit, any other nationally agreed process approved by AHC for which an acceptable risk assessment has been undertaken and that is subject to compliance verification.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swill feeding</td>
<td>Also known as ’feeding prohibited pig feed’, includes:</td>
</tr>
</tbody>
</table>
|                             | • feeding, or allowing or directing another person to feed, prohibited pig feed to a pig  
|                             | • allowing a pig to have access to prohibited pig feed  
|                             | • the collection and storage or possession of prohibited pig feed on a premises where one or more pigs are kept  
<p>|                             | • supplying to another person prohibited pig feed that the supplier knows is for feeding to any pig.                                                                                                                                                                                                                       |
|                             | This definition was endorsed by the Agricultural Ministers’ Council through AGMIN OOS 04/2014.                                                                                                                                                                                                                                          |
| Trace premises (TP)         | Temporary classification of a premises that contains susceptible animal(s) that tracing indicates may have been exposed to the disease agent, or contains contaminated animal products, wastes or things, and that requires investigation(s).                                                                                              |
| Tracing                     | The process of locating animals, persons or other items that may be implicated in the spread of disease, so that appropriate action can be taken.                                                                                                                                                                                                   |
| Unknown status premises (UP)| A premises within a declared area where the current presence of susceptible animals and/or risk products, wastes or things is unknown.                                                                                                                                                                                                 |
| Vaccination                 | Inoculation of individuals with a vaccine to provide active immunity.                                                                                                                                                                                                                                                                  |
| Vaccine                     | A substance used to stimulate immunity against one or several disease-causing agents to provide protection or to reduce the effects of the disease. A vaccine is prepared from the causative agent of a disease, its products, or a synthetic substitute, which is treated to act as an antigen without inducing the disease. |
| – adjuvanted                | A vaccine in which one or several disease-causing agents are combined with an adjuvant (a substance that increases the immune response).                                                                                                                                                                                                  |
| – attenuated                | A vaccine prepared from infective or ’live’ microbes that are less pathogenic but retain their ability to induce protective immunity.                                                                                                                                                                                                      |
| – gene deleted              | An attenuated or inactivated vaccine in which genes for non-essential surface glycoproteins have been removed by genetic engineering. This provides a useful immunological marker for the vaccine virus compared with the wild virus.                                                                                                             |
| – inactivated               | A vaccine prepared from a virus that has been inactivated (’killed’) by chemical or physical treatment.                                                                                                                                                                                                                                 |
| – recombinant               | A vaccine produced from virus that has been genetically engineered to contain only selected genes, including those causing the immunogenic effect.                                                                                                                                                                                                  |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vector</td>
<td>A living organism (frequently an arthropod) that transmits an infectious agent from one host to another. A <em>biological</em> vector is one in which the infectious agent must develop or multiply before becoming infective to a recipient host. A <em>mechanical</em> vector is one that transmits an infectious agent from one host to another but is not essential to the life cycle of the agent.</td>
</tr>
<tr>
<td>Veterinary investigation</td>
<td>An investigation of the diagnosis, pathology and epidemiology of the disease. <em>See also</em> Epidemiological investigation</td>
</tr>
<tr>
<td>Viraemia</td>
<td>The presence of viruses in the blood.</td>
</tr>
<tr>
<td>Wild animals</td>
<td></td>
</tr>
<tr>
<td>– native wildlife</td>
<td>Animals that are indigenous to Australia and may be susceptible to emergency animal diseases (e.g., bats, dingoes, marsupials).</td>
</tr>
<tr>
<td>– feral animals</td>
<td>Animals of domestic species that are not confined or under control (e.g., cats, horses, pigs).</td>
</tr>
<tr>
<td>– exotic fauna</td>
<td>Nondomestic animal species that are not indigenous to Australia (e.g., foxes).</td>
</tr>
<tr>
<td>Zero susceptible species premises (ZP)</td>
<td>A premises that does not contain any susceptible animals or risk products, wastes or things.</td>
</tr>
<tr>
<td>Zoning</td>
<td>The process of defining, implementing and maintaining a disease-free or infected area in accordance with OIE guidelines, based on geopolitical and/or physical boundaries and surveillance, in order to facilitate disease control and/or trade.</td>
</tr>
<tr>
<td>Zoonosis</td>
<td>A disease of animals that can be transmitted to humans.</td>
</tr>
</tbody>
</table>
9 Abbreviations

9.1 Disease-specific abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASF</td>
<td>African swine fever</td>
</tr>
<tr>
<td>CSF</td>
<td>classical swine fever</td>
</tr>
<tr>
<td>NVD</td>
<td>National Vendor Declaration</td>
</tr>
</tbody>
</table>

9.2 Standard AUSVETPLAN abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAHL</td>
<td>Australian Animal Health Laboratory</td>
</tr>
<tr>
<td>AN</td>
<td>assessed negative</td>
</tr>
<tr>
<td>APF</td>
<td>approved processing facility</td>
</tr>
<tr>
<td>ARP</td>
<td>at-risk premises</td>
</tr>
<tr>
<td>AUSVETPLAN</td>
<td>Australian Veterinary Emergency Plan</td>
</tr>
<tr>
<td>CA</td>
<td>control area</td>
</tr>
<tr>
<td>CCEAD</td>
<td>Consultative Committee on Emergency Animal Diseases</td>
</tr>
<tr>
<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organisation</td>
</tr>
<tr>
<td>CVO</td>
<td>chief veterinary officer</td>
</tr>
<tr>
<td>DCP</td>
<td>dangerous contact premises</td>
</tr>
<tr>
<td>DCPF</td>
<td>dangerous contact processing facility</td>
</tr>
<tr>
<td>EAD</td>
<td>emergency animal disease</td>
</tr>
<tr>
<td>EADRA</td>
<td>Emergency Animal Disease Response Agreement</td>
</tr>
<tr>
<td>EADRPLAN</td>
<td>Emergency Animal Disease Response Plan</td>
</tr>
<tr>
<td>EDTA</td>
<td>ethylenediaminetetraacetic acid (anticoagulant for whole blood)</td>
</tr>
<tr>
<td>ELISA</td>
<td>enzyme-linked immunosorbent assay</td>
</tr>
<tr>
<td>GP</td>
<td>general permit</td>
</tr>
<tr>
<td>IETS</td>
<td>International Embryo Transfer Society</td>
</tr>
<tr>
<td>IP</td>
<td>infected premises</td>
</tr>
<tr>
<td>LCC</td>
<td>local control centre</td>
</tr>
<tr>
<td>NASOP</td>
<td>nationally agreed standard operating procedure</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full title</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>NMG</td>
<td>National Management Group</td>
</tr>
<tr>
<td>OA</td>
<td>outside area</td>
</tr>
<tr>
<td>OIE</td>
<td>World Organisation for Animal Health</td>
</tr>
<tr>
<td>PCR</td>
<td>polymerase chain reaction</td>
</tr>
<tr>
<td>POR</td>
<td>premises of relevance</td>
</tr>
<tr>
<td>RA</td>
<td>restricted area</td>
</tr>
<tr>
<td>RP</td>
<td>resolved premises</td>
</tr>
<tr>
<td>SCC</td>
<td>state coordination centre</td>
</tr>
<tr>
<td>SP</td>
<td>suspect premises</td>
</tr>
<tr>
<td>SpP</td>
<td>special permit</td>
</tr>
<tr>
<td>TP</td>
<td>trace premises</td>
</tr>
<tr>
<td>UP</td>
<td>unknown status premises</td>
</tr>
<tr>
<td>ZP</td>
<td>zero susceptible species premises</td>
</tr>
</tbody>
</table>
10 References


### 10.1 Further reading


### 10.2 Training resources

See the *Overview Document* for a full list of training resources.