

Disposal planning

Authorised by	State Emergency Coordinator	Authorised date	17 Nov 2014
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1. Application / Scope

- NSW DPI has responsibility for the disposal of carcasses and contaminated materials in biosecurity and natural disaster emergencies according to national and state arrangements.
- Disposal options are numerous and choices will be impacted by factors such as carcass/material type, quantity, condition, location, disease/pest, health and safety, community, environment, resources, cost, time, and political issues. More than one option can be used in any response including a 'do nothing' approach.

2. Abbreviations / Definitions

- AVP - Ausvetplan
- IAP – Incident Action Plan

3. Resources / Equipment

- Disposal options matrix
- Information that supports or eliminates options
- Approved suppliers lists for contractors eg rendering plants, commercial compost sites
- List of nominated disposal sites
- Disposal and transport procedures
- Environmental, Engineering and Transport Services Functional Area liaison officers (to form a disposal management team)

4. Warnings

- Well-being of personnel due to exposure to carcasses, contaminated material, work environment and affected community
- Owner considerations and well-being should be taken into account where possible, particularly with disposal of pets
- Wider community considerations such as schools, roads, visibility, smell etc
- Ineffective communication and consultation will reduce the likelihood of achieving an acceptable outcome

5. Procedure

5.1 Determining disposal option(s)

Use the disposal options matrix to assist in determining the most suitable disposal option(s) as follows.

1. Context / scope of situation

- Assess each situation on its merit
- Each situation may require a separate factor x option analysis
- Consider combinations of disposal options eg composting until burial becomes available
- Context / scope should include information that informs the relevance of factors

2. Objectives to be achieved
 - Objectives will impact on determining the importance of some factors and irrelevance of others
 - Determine objectives – long term outcomes (environment) vs short term outcomes
3. Weight factors (W)
 - Factors are elements that contribute to a result, accomplishment, or process (see a list on Appendix 2).
 - Usually there are 5-7 factors that will have the most impact on the options.
 - Assign a value of zero (0) for factors that are not relevant to this situation.
 - Weight the factors with 1, 2 or 3, where 1 is least important and 3 most important
 - Each numerical value can be used more than once.
 - Enter the number for each factor in the column on the Disposal options matrix
4. Rank options (R)
 - Options are disposal methods. Select the most relevant disposal options (see Appendix 1). Options may require further classification by location, land manager or other descriptors.
 - Enter the relevant options on the Disposal options matrix.
 - Count the options then rank each option from lowest to highest numerically with the lowest as the least acceptable preference and the highest as the most acceptable. Complete this for each factor as each option will address the factor differently.
 - Each numerical value is only used once for each factor, except for zero.
 - Enter the rank number for each option on the Disposal options matrix.
5. Determining the 'best' option
 - Rating for each option/factor combination = $R \times W$
 - Final score for each option is the sum of the option/factor rating
 - Theoretically the option with the highest final option score is the 'best' option for that situation. A combination of options may be used.
 - Conduct a risk assessment on the selected option(s) – treatments to address cost, operations including WHS, social, environment and political risks
 - Report recommendations and supporting information for approval.
 - Controller to approve recommended disposal options. Approved option to be incorporated into the IAP.

5.2 Review

Monitor and review implemented disposal options to ensure objectives are being met. Re-evaluation of factors options analysis may be required, especially if new information becomes available, or conditions/situation have changed that impact the context of the situation.

6. References

Procedure

- [Disposal of birds by composting](#)
- [Disposal of large animals by composting](#)
- [Transport of carcasses and contaminated material](#)

Forms and templates

- [Disposal options matrix](#)

Information

- Refer to Primefact 310 – [Humane destruction of stock](#)
- AusVetPlan – [Disposal procedures](#)
- AusVetPlan – [Disease strategies](#)
- [NSW State Emergency Management Plan](#)

7. Revision History

Version	Date	Amendments	
		Section	Details
1	14 Nov 14		For approval

Contact Officer: Operations Manager

8. Appendices

Appendix 1: Disposal methods

Refer to Ausvetplan Operations Manual - Disposal for details on the following disposal options.

1. **Burial** (mass burial, mounding, commercial landfill, trench on farm) – using disposal sites on government or private land, including burial at commercial landfill/waste depots or on owner's property.
2. **Burning** (commercial incineration, pyre, air curtain, mobile incineration) - open air pyres and pits can be created centrally (requiring transport) or on each property. Commercial incineration options can also include power stations, cement kilns, clinical waste systems at laboratory and vet surgery complexes.
3. **Rendering** – a process that simultaneously dries carcasses and separates the fat from the bone and protein, yielding fat and protein meal products for a variety of markets, eg fish kills to be converted to fertiliser.
4. **Composting** (windrows, bins, vessels) – an aerobic process that converts organic materials into useful and biologically stable products. The process can be conducted on government or private land or at commercial composting sites.
5. **Anaerobic digestion** – facilities use a mixed bacterial ecosystem without oxygen that transforms organic material into methane, carbon dioxide and sludge.
6. **Other**
 - a) **Alkaline hydrolysis** – a process using heat, pressure and an alkaline solution to dissolve and sterilise biological materials.
 - b) **Leave *in situ*** – leave carcasses and materials to naturally decompose in situ.
 - c) **Ocean disposal** – usually only an option for marine carcasses.

Appendix 2: Factors affecting disposal options (from AVP and Disposal options matrix)

Resources <ul style="list-style-type: none"> ▪ Ability to handle capacity ▪ Capacity of option ▪ Engineering resources available ▪ Materials available to complete ▪ Resources available to develop ▪ Resources available to operate ▪ Site security ▪ Technical support available 	Health and Safety <ul style="list-style-type: none"> ▪ Safety of personnel 	Timelines <ul style="list-style-type: none"> ▪ Duration of process ▪ Ready for immediate use ▪ Site availability ▪ Time to complete disposal option ▪ Time to get option ready for use 	Disease <ul style="list-style-type: none"> ▪ Minimises biosecurity risks ▪ Site biosecurity ▪ Technical aspects of disease eg BSE ▪ Zoonotic disease
Transport <ul style="list-style-type: none"> ▪ Site accessible ▪ Transport biosecure options available ▪ Transport route availability ▪ Transport time 	Legislation <ul style="list-style-type: none"> ▪ Approvals in place ▪ Compliance with Government policy ▪ Compliance with movement controls ▪ Regulatory compliance 	Environment <ul style="list-style-type: none"> ▪ Affected by weather ▪ Environmentally beneficial ▪ Geotechnical information available 	Cost <ul style="list-style-type: none"> ▪ Long term costs eg monitoring ▪ Operational costs
Industry stds & agreements <ul style="list-style-type: none"> ▪ Acceptance by industry ▪ Industrial implications 	Local Community <ul style="list-style-type: none"> ▪ Acceptance by broader community ▪ Acceptance by local community ▪ Site in CA ▪ Site in RA 	International Community <ul style="list-style-type: none"> ▪ International acceptance 	Cross border issues <ul style="list-style-type: none"> ▪ Animal health regulations ▪ Environmental regulations ▪ Transport regulations ▪ Community expectations ▪ Consistency with policy