
CHAPTER 8A

DISTRIBUTION POWERLINE VEGETATION MANAGEMENT

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CHAPTER 8A DISTRIBUTION POWERLINE VEGETATION MANAGEMENT

8A.1 INTRODUCTION

8A.1.1 Objectives

Italicised expressions in the Chapter are defined in Chapter 14.

This Chapter has the following objectives:

- to promote public safety in respect of fire hazards;
- to establish a standard of care which should be observed when managing vegetation near *distribution powerlines*;
- to reduce vegetation related interruptions to electricity *supply*;
- to encourage the *Distribution Network Service Provider* to consult with affected persons, seek advice on specifics from the relevant authorities and have regard to any guidelines provided by relevant authorities;
- to balance fire safety, reliability of the electricity system and community costs with *conservation*, amenity, utility and heritage values in the best interests of the people of Tasmania; and
- to minimise the effect of the management of vegetation around *distribution powerlines* on the natural environment.

Note

TasNetworks is the licensed *Distribution Network Service Provider* on mainland Tasmania and the *Hydro-Electric Corporation* is the licensed *Distribution Network Service Provider* on the Bass Strait Islands.

8A.1.2 Application of Chapter

This Chapter applies to any *distribution powerline*.

8A.1.3 Purpose

The purpose of this Chapter is to assist *electricity entities* in the management and the pruning and clearing of vegetation in the vicinity of *distribution powerlines*. To that end, this Chapter sets out:

- the minimum standards and practices for maintaining vegetation clear of *distribution powerlines*;
- who is responsible for maintaining the *clearance space*; and

- the role of the *Distribution Network Service Provider*.

8A.1.4 Review

This Chapter is to be reviewed by the *Regulator* eighteen months after its commencement.¹

The *Regulator* will provide a report of that review and propose any *changes* that are considered necessary and appropriate.

8A.2 PRINCIPLES OF MAINTAINING CLEARANCE BETWEEN DISTRIBUTION POWERLINES AND VEGETATION

8A.2.1 General

There are a number of methods of maintaining the *clearance space*. The most common method is pruning and clearing of vegetation. Other methods include:

- using *construction* methods such as underground *electric lines*;
- selecting *distribution powerline* routes which avoid vegetation;
- using engineering solutions, for example, taller poles for low growth vegetation areas;
- planting appropriate vegetation species which will not interfere with *distribution powerlines* even when fully grown;
- informing private landowners as to appropriate vegetation species to be planted under and around *distribution powerlines*; and
- using insulated cables such as *aerial bundled cable* to reduce the *clearance space* required (refer clause 8A.3.3).

Factors determining the most appropriate method of maintaining the *clearance space* include:

- minimisation of the potential risk to the public;
- cost;
- community *conservation* and heritage values, utility, amenity and visual impact;
- negotiation and consultation with *owners* or *occupiers*; and
- the type of vegetation and its growth and regrowth characteristics.

¹ Chapter 8A commenced in September 2002. The results of the review are contained in *Review of Distribution Powerline Vegetation Management Code, November 2005*.

The nature of the ground conditions, topography, the nature and density of vegetation and climate will cause the cost of each method and any recurrent savings from avoided clearing and pruning to vary significantly from place to place.

It is for the *Distribution Network Service Provider* to determine the most appropriate method of maintaining the *clearance space* (refer clause 8A.5.1). This does not preclude affected persons approaching the *Distribution Network Service Provider* in order to discuss alternatives.

8A.2.2 Vegetation Management

Where pruning or clearing of vegetation is necessary, the *Distribution Network Service Provider* should employ effective management procedures. Personnel should be trained and skilled in pruning practices to recognised industry standards, such as Australian Standard AS4373-2007 - Pruning of Amenity Trees.

Correct pruning practices can discourage regrowth towards the *distribution powerline* and reduce:

- the frequency of pruning;
- the likelihood of disease and decay; and
- the risk of vegetation becoming a hazard to the public and the *distribution powerline*

while maintaining the integrity, amenity and utility of the vegetation.

The *Distribution Network Service Provider* should have regard to the principles of prevention of soil erosion, and the preservation of water quality, windbreaks and specific wildlife habitat.

To provide a consistent and measurable approach to pruning or clearing vegetation near *distribution powerlines* and to assist people to understand these concepts, the following practices and classifications apply:

(a) Clearance Space

The *clearance space* varies with the type of *distribution powerline* installed and the risk of the ignition of fire at that location (refer clauses 8A.3.2 and 8A.3.3). The *clearance space* is designed to provide fire safety in *low fire risk areas* and *high fire risk areas* and reliability and continuity of electricity *supply*. The dimensions of the *clearance space* have been determined following consideration of the effect of adverse environmental and weather conditions (refer clause 8A.3.4).

(b) Regrowth Space

The *regrowth space* required varies with the species of vegetation, the quality of the pruning or clearing, the micro-environment and the *pruning and clearing cycle*. Determining the regrowth rate is a matter of considering the factors involved. It should be assessed with the support of expert knowledge in vegetation management and following consultation with affected persons.

(c) Hazard Space

The *Distribution Network Service Provider* should take appropriate action in relation to trees and limbs in the *hazard space* to ensure the safety and reliability of the *distribution powerline*. The *hazard space* will vary with the species of vegetation and the extent of exposure to adverse weather conditions. The *hazard space* should be determined with reference to these factors and assessed with the support of vegetation management and arboriculture expertise, following consultation with affected persons.

(d) Pruning and Clearing Cycle

The *pruning and clearing cycle* is based on practical factors which include cost, local growing conditions and the anticipated vigour of the regrowth of species involved, coupled with the use of the land, community values and the utility and amenity the vegetation provides to the area. The *pruning and clearing cycle* need not be the same for all areas, but will be determined according to conditions in a particular location.

8A.2.3 Suitable Vegetation Species

In some situations, vegetation cannot be pruned to the requirements of this Chapter across successive *pruning and clearing cycles* without destroying the vegetation's character, amenity and utility value or encouraging vigorous regrowth. In the longer term this could cause the vegetation to become unstable, unhealthy and a hazard to the public and the *distribution powerline*. This vegetation should be removed where judged appropriate following assessment of the vegetation's *conservation* value and appropriate consultation (see clause 8A.5.3).

As a general rule, species with a mature height greater than 3.5 metres should not be planted or nurtured under *distribution powerlines*.

Saplings whose mature height will infringe the *clearance space* are best removed at an early stage of their growth to minimise cost and disruption to the area in the future.

Planting of suitable species by *owners* and *occupiers* will remove the potential risk to *distribution powerlines* and the need for costly recurrent pruning or clearing as well as retaining the amenity and utility value of vegetation to the public and environment. On *public land*, planting of suitable native species is preferred.

8A.2.4 Important Vegetation

Locations recognised by relevant authorities or bodies as containing 'important vegetation' require special attention.

For the purposes of this Chapter ‘important vegetation’ includes:

- botanically, historically or culturally important vegetation;
- vegetation of outstanding aesthetic value;
- vegetation of ecological significance;
- vegetation referred to in the National Trust Tree Register; and
- the habitat of threatened species.

Before commencement of pruning and clearing the *Distribution Network Service Provider* should identify where the maintenance of the *clearance space*, the *regrowth space* and the *hazard space* may be detrimental to important vegetation. The *Distribution Network Service Provider* should seek advice from the relevant authorities, for example the Department of Primary Industries, Parks, Water and Environment and local government, as well as land care and community groups as advised by the relevant authorities, to identify ‘important vegetation’.

Alternative *distribution powerline* routes or *construction* methods may help to preserve ‘important vegetation’. The manner in which this may be done needs to be decided in consultation between the *Distribution Network Service Provider* and the person or body responsible for the vegetation. This should result in an agreement on the most practical management arrangements and conditions that may apply.

8A.2.5 Important Locations

The *Distribution Network Service Provider* should consult with the relevant authorities on the management of ‘important locations’. For the purposes of this Chapter ‘important locations’ contain the following:

- sites of historically or culturally important remnants or artefacts;
- sites of historically or culturally important events;
- areas of geo-conservation significance as identified in the Tasmanian Geo-Conservation database;
- sites of outstanding aesthetic value or landscape or streetscape values; or
- sites of ecological significance.

Before commencement of pruning and clearing the *Distribution Network Service Provider* should identify where the maintenance of the *clearance space*, the *regrowth space* and the *hazard space* may be detrimental to an important location. The *Distribution Network Service Provider* should seek advice from the relevant authorities, for example the Department of Primary Industries, Parks, Water and Environment and local government, as well as community groups as advised by the relevant authorities, to identify ‘important locations’.

Alternative *distribution powerline* routes, *construction* methods or pruning and clearing methods may help to preserve ‘important locations’. The manner in which this may be done needs to be decided in consultation between the *Distribution Network Service Provider* and the person or body responsible for the location. This should result in an agreement on the most practical management arrangements and conditions that may apply.

8A.2.6 Vegetation Management Plans and Practices

In undertaking vegetation management around powerlines a *Distribution Network Service Provider* should take into account vegetation management plans of third parties and vegetation management practices and projects applying to the area(s) immediately surrounding the *distribution powerline*, for example the Tasmanian Roadside Vegetation Management System.

8A.2.7 Weed Management

This Chapter must be interpreted and applied in conjunction with the Weed Management Act 1999.

Note

Clause 8A.5.3(d) provides that, when proposed pruning or clearing will change from the established practice for a location, the *Distribution Network Service Provider* should make reasonable endeavours to negotiate with the *owner* of the land satisfactory arrangements for avoiding the transfer of noxious *weeds* and diseases.

8A.3 DISTRIBUTION POWERLINE CLEARANCE STANDARDS

8A.3.1 General

The principal determinants of the dimensions of the *clearance space* are protection of the public from fire start potential and ensuring continuity and reliability of *supply*. Accordingly, the *clearance space* will vary depending on the fire risk category of the area in which the *distribution powerline* is situated and factors associated with the type of *distribution powerline* installed.

8A.3.2 Fire Risk Areas

The risk of fire starting and spreading varies throughout Tasmania. To establish the *clearance space* required, Tasmania has been divided into two *categories* in which different *clearance space* dimensions apply:

- *low fire risk areas* (predominantly urban); and
- *high fire risk areas* (predominantly rural).

(Refer to Tables 1, 2 and 3).

At the boundary of fire risk areas, the *clearance space* requirements of the *high fire risk area* may be applied to the *low fire risk area* for a distance of 100 metres.

The *Distribution Network Service Provider* should seek advice from the *fire control authority* as to the suitability of any changes to the application of these categories to an area within which the *Distribution Network Service Provider* proposes to undertake vegetation management activity.

8A.3.3 Factors Affecting Dimensions of Distribution Powerline Clearance

The dimensions of the *clearance space* are also dependent on factors associated with the type of *distribution powerline* installed and include:

(a) *Distribution powerline voltage* -

the voltage level of the *distribution powerline* influences the potential for electric discharge. The higher the voltage the greater the potential and hence the need for a greater *clearance space*.

(b) *Distribution powerline type* -

insulating *distribution powerline* conductors reduces the risk of electric discharge. Using *aerial bundled cable* or other insulated conductors reduces the necessary dimensions of the *clearance space*.

(c) *Span length (distance between poles)* -

As the span length increases, the added weight of the *distribution powerline* conductors causes an increase in *distribution powerline* sag. *Distribution powerline* conductors can sway with the wind, therefore all dimensions of the *clearance space* must be greater as the span length increases.

(d) *Conductor size* -

The size of a *distribution powerline* conductor affects its weight and therefore the amount that the conductor will sag. *Distribution powerline* conductors can sway with the wind therefore dimensions of the *clearance space* needs to increase as the size of the conductor increases.

Note

(1) Sag in very long spans can be more than 10 metres.

(2) For further information on sag and sway of *distribution powerline* conductors, refer to Appendix A.

(e) *Distance along the distribution powerline conductors from the pole* -

Along the *distribution powerline* conductors the greatest sag occurs midway between the supporting poles (on level ground). Therefore the dimensions of the *clearance space* should be greater in the centre region of the span than near the pole (refer Figure 1).

Note

For uneven ground the greater sag will not necessarily occur at the mid-point of the span. Maximum *clearance space* dimensions are to apply at the point of maximum sag.

- (f) Temperature of the *distribution powerline* conductors -

Increases in the temperature of *distribution powerline* conductors, caused by weather and the amount of electricity being carried, increases the sag of the conductors. These factors are in a state of continual change, so an allowance is made in the dimensions of the *clearance space* for the temperature of *distribution powerline* conductors.

8A.3.4 Clearance Space Dimensions

- (a) The dimensions of the *clearance space* in *low fire risk areas* and *high fire risk areas* for high voltage and low voltage distribution powerlines constructed with aerial bundled cable and insulated service cable are those prescribed in Table 1. For *low fire risk areas* only, the clearance space for aerial bundled cable at the pole as specified in column 1 of Table 1 may be reduced where tree trunks and limbs near the aerial bundled cable present no risk of abrasion. For *low fire risk areas* only, the clearance space between aerial bundled cable and foliage may also be reduced to allow foliage, which has insufficient strength to abrade the cable for the duration of the pruning and clearing cycle, to remain in contact with the aerial bundled cable.
- (b) The vertical dimensions of the *clearance space* for *low fire risk areas* and *high fire risk areas* for *distribution powerlines* other than those constructed with *aerial bundled cable* and *insulated service cable* and for the operating voltages given are those prescribed in Table 2.
- (c) The horizontal dimensions of the *clearance space* for *low fire risk areas* and *high fire risk areas* for *distribution powerlines* other than those constructed with *aerial bundled cable* and *insulated service cable* and for the operating voltages given are those prescribed in Table 3.

Notes Relating to the Tables

1. All dimensions given in the Tables are from a *distribution powerline* conductor in still air and account for the sag and sway of the conductor. For slender vegetation species and other unique situations, additional allowances may be necessary.
2. In *low fire risk areas* allowing limbs and foliage to grow over the *distribution powerline* from adjacent vegetation is discouraged, but permitted. Healthy and stable limbs may remain as shown in Figure 3 provided the tree does not readily provide access to the *distribution powerline*.

3. In *high fire risk areas* where the *voltage* of the *distribution powerline* is equal to or exceeds 11 000 volts, foliage overhang of the *distribution powerline* from adjacent vegetation is strongly discouraged.

Foliage overhang of the *distribution powerline* may only occur where such cases have been assessed by a suitably trained and qualified person as safe.

Within *High Bushfire Loss Consequence Areas*, a suitably trained and qualified person shall additionally inspect overhanging limbs and foliage and where hazards are identified a risk assessment shall be undertaken and recorded. This risk assessment shall form the basis of the action necessary to manage or remove the hazard. Figure 4 shows the ideal situation for *high fire risk areas*.

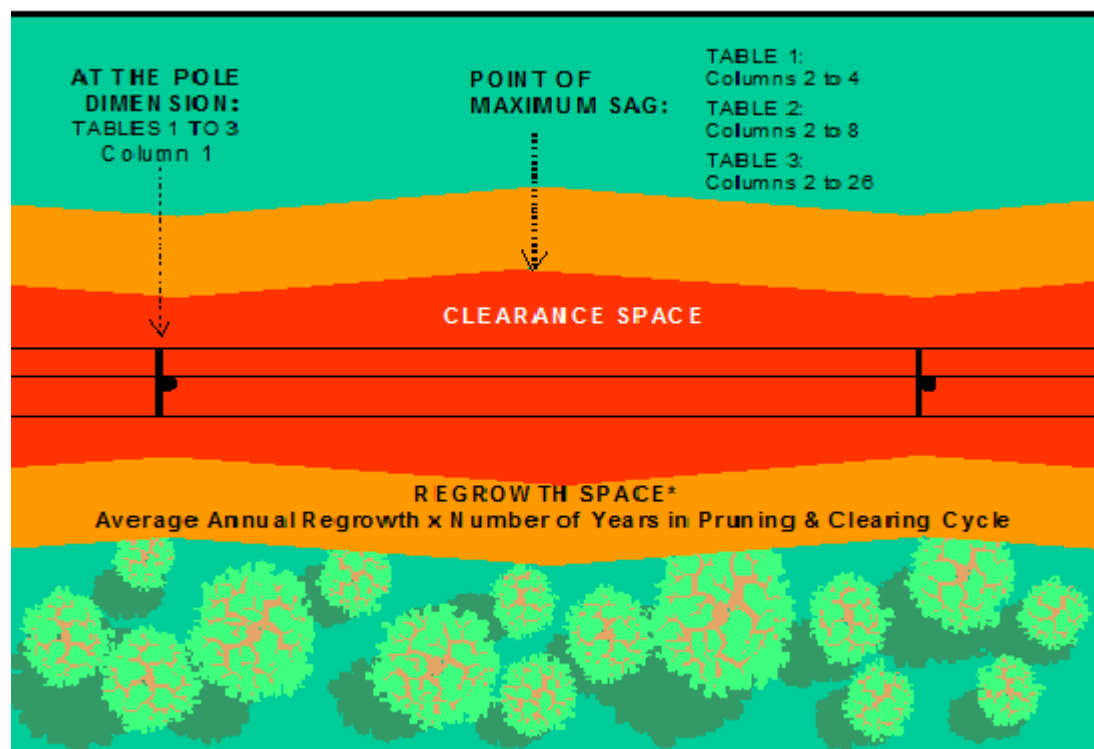
4. For *aerial bundled cable* and *insulated service cable* the *clearance space* can generally be in the form of a circle in *low fire risk areas* and *high fire risk areas*.
5. The classifications in each Table are subject, by agreement between both parties, to any clearance areas negotiated by the *owner* with the *Distribution Network Service Provider* prior to the introduction of this Chapter.
6. The figures in column 1 in each Table are clearance dimensions at a power pole.
7. The figures in columns 2 to 4 in Table 1, columns 2 to 8 in Table 2 and columns 2 to 26 in Table 3 are clearance dimensions for powerline spans of the lengths indicated.

Figure 1: Low and High Fire Risk Areas

Showing the *Clearance Space* and the *Regrowth Space*.

Applies to all types of overhead *distribution powerlines*.

The *distribution powerline* shown represents a bare conductor type.



**Regrowth Space* shown is indicative only. It will vary with species, soil conditions and other factors. See Clause 8A.2.

Table 1: Low and High Fire Risk Areas

Dimensions of *Clearance Space* from a Still Distribution Cable - *Aerial Bundled Cable* and *Insulated Service Cable (high voltage and low voltage)*

Note: Table 1 is illustrated in Figure 2.

Type of Powerline	Clearance Spaces/Point of Maximum Sag			
	At Pole	Away from Pole		
	Column 1 All Spans	Column 2 Span <40m	Column 3 Span 40-70m	Column 4 Span 70-100m
	In all directions			
<i>Aerial bundled cable</i>	0.3m	0.5m	0.5m	0.7m
<i>Insulated service cable</i>	0.5m	0.6m	1.0m	-

Figure 2: Low and High Fire Risk Areas

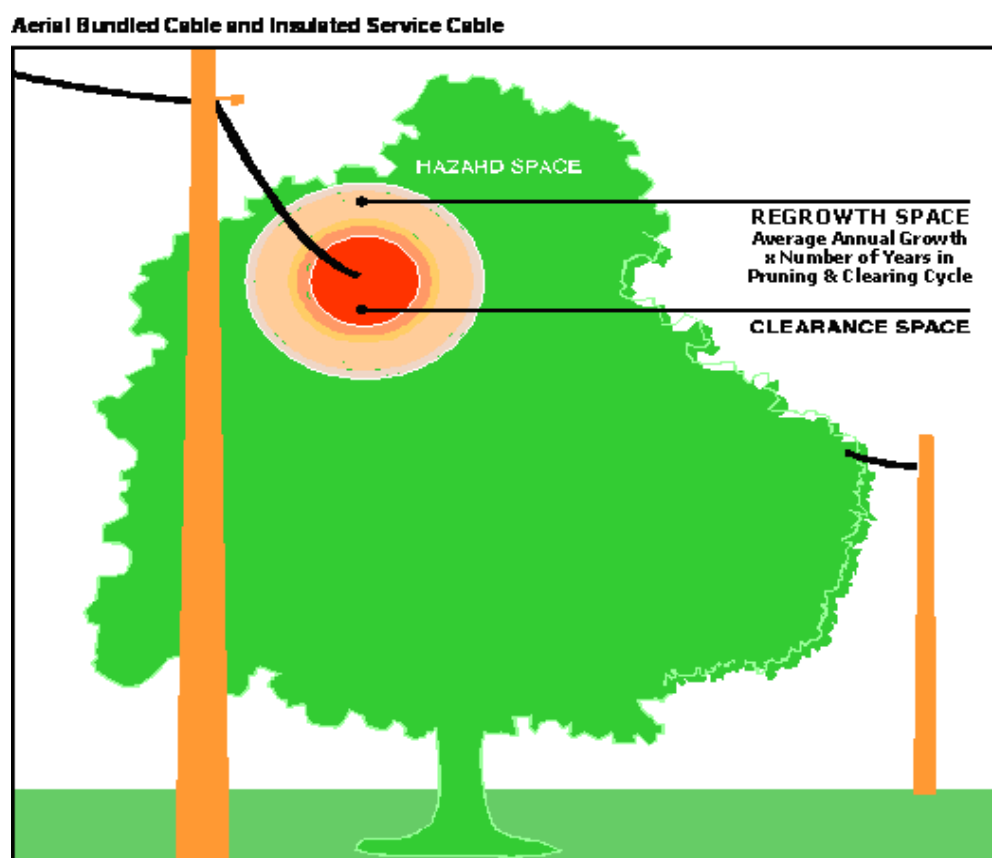


Table 2: Low and High Fire Risk Areas

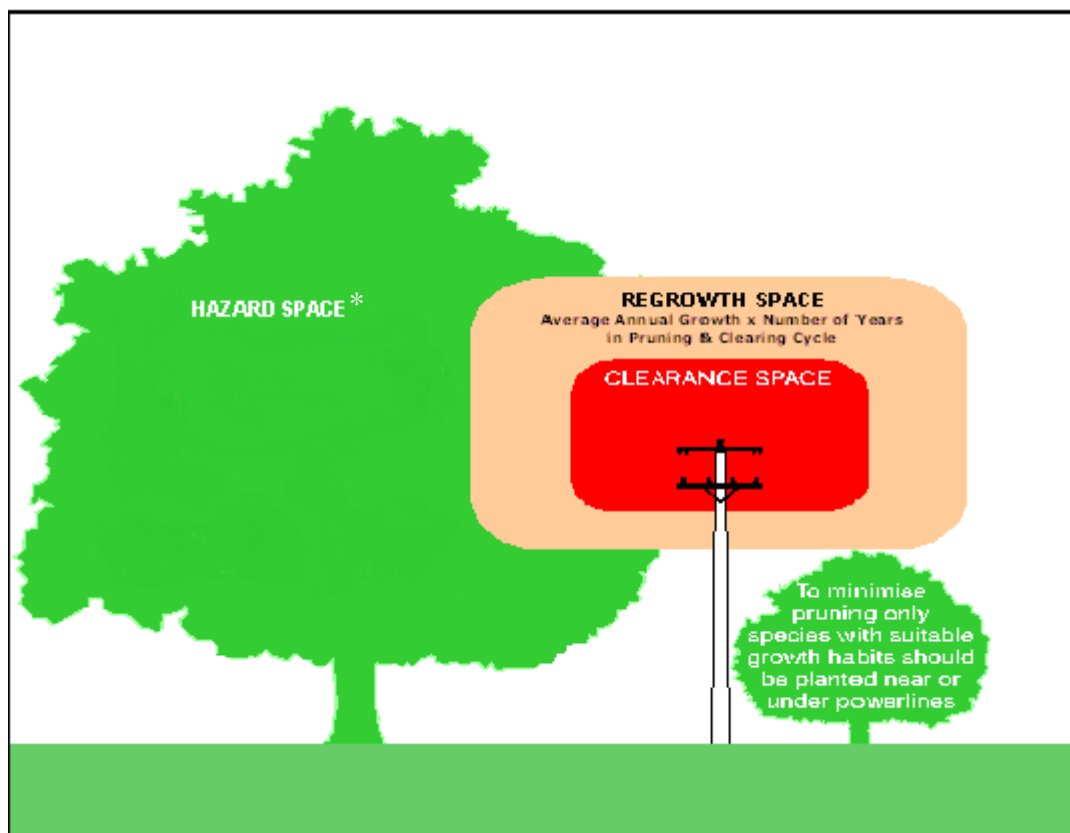
Vertical dimensions of the *Clearance Space* below a still Distribution Powerline Conductor –
Other than *Aerial Bundled Cable and Insulated Service Cable*.

Type of Powerline and Conductor	Clearance Spaces / Mid Span							
	At Pole	Span Length						
	Column 1 All spans	Column 2 Span <40m	Column 3 Span <60m	Column 4 Span <80m	Column 5 Span <100m	Column 6 Span <125m	Column 7 Span <150m	Column 8 Span >150m
Bare LV²: All	1.0m	1.0m	1.5m	1.5m	1.5m	1.5m	1.5m	2.0m
Bare HV: Small³	1.5m	1.5m	1.5m	2.0m	2.0m	2.0m	2.0m	2.5m
Medium	1.5m	1.5m	1.5m	2.0m	2.0m	2.5m	2.5m	2.5m
Large	1.5m	1.5m	1.5m	2.0m	2.5m	2.5m	2.5m	2.5m

² LV means low voltage, HV means high voltage.

³ See definition of *conductor size* in Chapter 14 for explanation of ‘Small’, ‘Medium’ and ‘Large’.

Figure 3: Low Fire Risk Areas



*Sound limbs in the *hazard space* may grow over the *clearance space* for powerlines up to 11 kV provided the tree does not provide ready access to the powerline. Trees shall not be removed without prior consultation and agreement.

Table 3: Low and High Fire Risk Areas

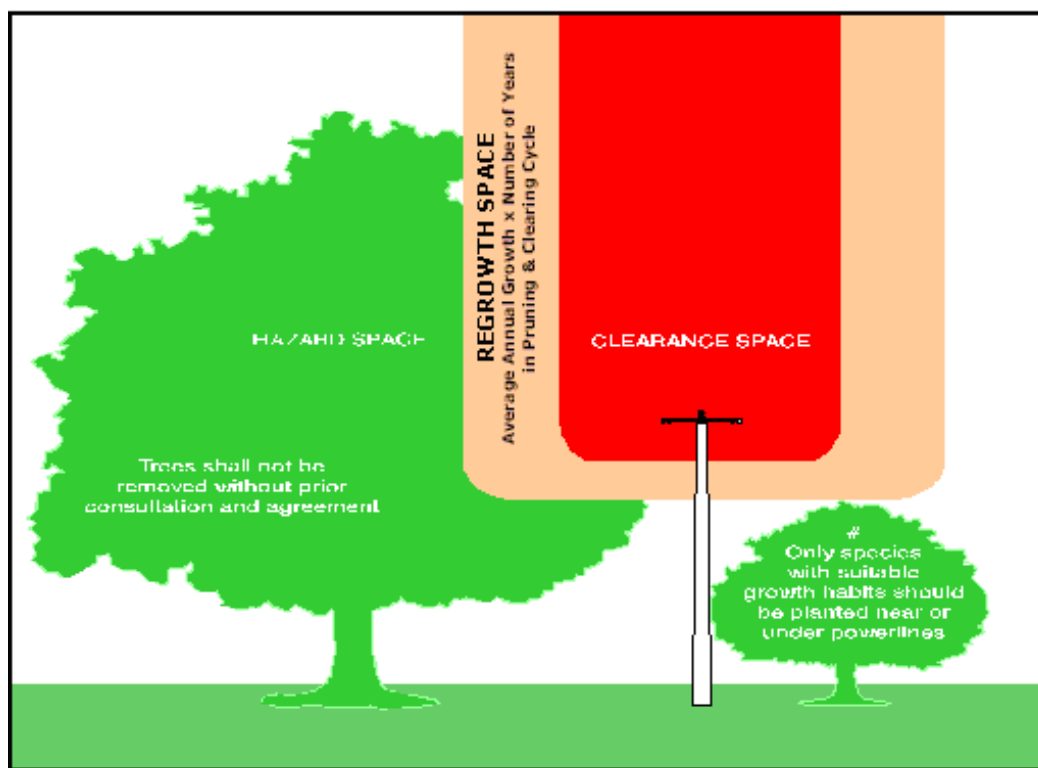
Horizontal dimensions of the *Clearance Space* from a still Distribution Powerline Conductor – Other than *Aerial Bundled Cable* and *Insulated Service Cable*

Type of Powerline and Conductor	Clearance Spaces / Mid Span								
	At Pole	Span Length							
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
	All spans	Span <40m	Span <60m	Span <80m	Span <100m	Span <125m	Span <150m	Span <175m	Span <200m
Bare LV ⁴ : All	1.0m	1.0m	1.5m	1.5m	2.5m	3.0m	3.5m		
Bare HV: Small ⁵	1.5m	1.5m	1.5m	2.0m	2.0m	2.0m	2.0m	2.0m	2.5m
Medium	1.5m	1.5m	1.5m	2.0m	2.0m	2.5m	3.0m	4.0m	4.5m
Large	1.5m	1.5m	1.5m	2.0m	2.5m	3.0m	3.5m	4.5m	5.5m
Type of Powerline and Conductor	Clearance Spaces / Mid Span								
	Span Length								
	Column 10	Column 11	Column 12	Column 13	Column 14	Column 15	Column 16	Column 17	Column 18
	Span <225m	Span <250m	Span <275m	Span <300m	Span <325m	Span <350m	Span <375m	Span <400m	Span <425m
Bare HV: Small	3.0m	3.5m	4.0m	4.5m	4.5m	5.0m	5.5m	6.5m	7.0m
Medium	5.5m	6.5m	7.5m	9.0m	10.5m	11.5m	13.5m	15.0m	16.5m
Large	6.5m	8.0m	9.0m	10.5m	12.5m	14.0m	16.0m	18.0m	20.0m
Type of Powerline and Conductor	Clearance Spaces / Mid Span								
	Span Length								
	Column 19	Column 20	Column 21	Column 22	Column 23	Column 24	Column 25	Column 26	
	Span <450m	Span <475m	Span <500m	Span <525m	Span <550m	Span <575m	Span <600m	Span >600m	
Bare HV: Small	7.5m	8.5m	9.0m	10.0m	11.0m	11.5m	12.5m	15.0m	
Medium	18.5m	20.5m	22.5m	25.0m	27.0m	29.5m	32.0m	35.0m	
Large	22.0m	24.5m	27.0m	29.5m	32.0m	35.0m	38.0m	45.0m	

⁴ LV means low voltage, HV means high voltage.

⁵ See definition of *conductor size* in Chapter 14 for explanation of ‘*Small*’, ‘*Medium*’ and ‘*Large*’.

Figure 4: High Fire Risk Areas



8A.4 RESPONSIBILITIES

8A.4.1 The Distribution Network Service Provider

The *Distribution Network Service Provider* is responsible for keeping vegetation clear of *distribution powerlines* and *service lines*:

- (a) in *safety and operational areas*;
- (b) on its *wayleaves* and easements; and
- (c) in accordance with the requirements of this Chapter.

8A.4.2 The Customer

A *Distribution Network Service Provider* must ensure that the *tariff* or *service and installation rules* applicable to a *Customer* or an *individual contract* between a *Customer* and a *Distribution Network Service Provider* provides that a *Customer* must, at its own expense, maintain safe clearances between vegetation on the *Customer's* property and *electrical infrastructure* providing *supply* to the *Customer's* *electrical installation*.

For the purpose of this clause 8A.4.2, safe clearances between vegetation on the *Customer's* property and *electrical infrastructure* providing *supply* to the *Customer's* *electrical installation* must be consistent with the relevant *clearance space* prescribed in clause 8A.3.4 with the exception that Note 3 does not apply.

8A.5 ROLE OF THE DISTRIBUTION NETWORK SERVICE PROVIDER

8A.5.1 Maintenance of the Clearance Space

A *Distribution Network Service Provider* should:

- (a) implement a *management plan* that specifies an inspection cycle and/or *pruning and clearing cycle* which is designed to achieve, under normal growth conditions, the relevant *clearance space* prescribed in clause 8A.3.4. The *management plan* must include the Distribution Network Service Provider's risk assessment approach;
- (b) decide which method to adopt to ensure that the *clearance space* remains free of vegetation taking account of the potential risk to the public, *conservation* and other values and avoided costs associated with the alternatives;
- (c) if the method adopted is pruning or clearing, determine the *regrowth space*, *hazard space* and the *pruning and clearing cycle*;

Notes

- 1. Options available and matters for consideration when evaluating alternative methods are discussed in clause 8A.2.1.
 - 2. While the *Distribution Network Service Provider* should decide how to maintain the *clearance space* this does not preclude persons from negotiating conditions under which other solutions may be used.
 - 3. Factors influencing *regrowth space*, *hazard space* and the *pruning and clearing cycle* are discussed in clause 8A.2.2.
- (d) ensure that the pruning or clearing is done responsibly; and
 - (e) give special attention to how the *clearance space* is maintained at important locations (see clause 8A.2.5) and the sites of important vegetation (see clause 8A.2.4).

8A.5.2 Assistance to the Public with Vegetation Matters

A Distribution Network Service Provider should:

- (a) assist the public so that pruning or clearing activities near *distribution powerlines* can be undertaken safely; and

Note

This may require a *Distribution Network Service Provider* to de-energise *distribution powerlines* or do preliminary pruning to enable the clearance of vegetation safely.

- (b) assist the community, when requested, in:
 - (i) setting safe limits of approach to *distribution powerlines* for pruning or clearing activities;
 - (ii) de-energising *distribution powerlines* to provide safe access;
 - (iii) obtaining advice on vegetation species and their growth habits; and
 - (iv) finding information on suitable vegetation species for planting near *distribution powerlines*; and
- (c) inform affected persons on request of the *Distribution Network Service Provider's* processes for considering alternative arrangements to avoid or reduce the need for pruning or clearing and the conditions that will apply to such arrangements and provide a publicised contact point within the organisation on vegetation management issues.

8A.5.3 Notification, Consultation and Negotiation

A Distribution Network Service Provider should:

- (a) notify the *occupiers* of land, giving reasonable notice, before starting programmed pruning or clearing which will not involve changes to established practice. Notices should be informative, explaining why compliance with this Chapter is necessary and stating the proposed time of the pruning and clearing. Where no one is in actual occupation of the land, notices to *owners* may be published in locally distributed newspapers;
- (b) consult with the *owner* of land when the proposed pruning or clearing will change from the established practice for that location and notify the *occupiers* of the land where the *owner* and the *occupiers* are not the same person;
- (c) when the proposed pruning or clearing will change from the established practice for that location, provide to the *owner* or, if not practical, the *occupiers*, a simple written explanation of the proposed method and extent of pruning or clearing which may include details of:

- (i) the use of chemicals;
- (ii) disposal of debris resulting from pruning or clearing;
- (iii) avoiding transfer of noxious *weeds* and diseases; or
- (iv) implementing measures to prevent bushfires from starting.

Note

When using chemicals due care should be observed to preserve public safety and quality assurance schemes such as Farm Quality Assurance Programs.

- (d) when the proposed pruning or clearing will change from the established practice for that location, make reasonable endeavours to negotiate with the *owner* satisfactory arrangements in relation to the matters covered in clause 8A.5.3(c); and
- (e) when the proposed pruning or clearing will change from the established practice for that location, consult with the *occupiers* or, if not practical, the *owner* of land, to make satisfactory arrangements for access to the *Distribution Network Service Provider's* assets.

8A.5.4 Emergency Clearing

In emergency situations, the *Distribution Network Service Provider* may remove vegetation which poses an immediate risk in accordance with powers under the Electricity Supply Industry Act 1995.

Under emergency circumstances, pruning may be undertaken without consultation, but the *Distribution Network Service Provider* should notify the *owner* or *occupiers* as soon as practicable after the removal of the vegetation.

8A.5.5 Disputes

Disputes with *owners* or *occupiers* may arise from decisions made by a *Distribution Network Service Provider* in carrying out vegetation management activities. The *Distribution Network Service Provider* should endeavour to resolve any dispute in accordance with the *Distribution Network Service Provider's* documented dispute resolution process.

A *Distribution Network Service Provider* should make its dispute resolution processes available to interested parties as a public document.

If this process fails to resolve the dispute, the matter may be referred to the *Ombudsman*.

Notwithstanding the nature of the dispute and the need to resolve the dispute in an amicable manner, the responsibility of the *Distribution Network Service Provider* to maintain the *clearance space* at all times cannot be compromised.

8A.5.6 Training

A *Distribution Network Service Provider* should ensure that any of its employees undertaking vegetation management in the vicinity of its powerlines, and any contractors it engages to carry out vegetation management, are appropriately trained and competent for that task.

Such training should cover the following areas:

- plant and *weed* identification;
- arboriculture;
- disposal of vegetation waste;
- precautions to avoid spread of *weeds* and plant diseases; and
- safe working practices near powerlines.

A *Distribution Network Service Provider* should seek advice from the relevant authorities as to appropriate training for vegetation management, for example, a government approved vocational and educational training organisation.

APPENDIX A - SAG AND SWAY IN DISTRIBUTION POWERLINES

Sag

The sag of a *distribution powerline* conductor can vary greatly during the day.

The amount of sag in any span is dependent on the:

- span length;
- *distribution powerline* conductor material;
- *distribution powerline* conductor tension;
- *distribution powerline* conductor size; and
- temperature.

The temperature of a *distribution powerline* conductor can vary dramatically in a space of half an hour resulting in a large increase of sag. This change in temperature can be caused by the ambient air temperature, solar radiation heating the conductor, or the electrical *load* on the *distribution powerline* conductor. The variation of the *distribution powerline* conductor's temperature is not normally detectable by a person observing the conductor and can result in unsafe *distribution powerline* clearances.

Under normal operating conditions, variations in the sag of a *distribution powerline* conductor in a span of less than 50 metres can be as great as 1 metre. In longer spans the variation of sag can be as great as 2 metres and in very long spans the actual sag may be more than 10 metres.

Sway

All *distribution powerline* conductors sway. In other words, *distribution powerline* conductors swing from side to side. The sway is often caused by wind passing over the *distribution powerline* conductor or by objects accidentally bumping the conductor or conductor supports. *Distribution powerline* conductors can sway greatly in light winds, which can set up resonant vibrations in the *distribution powerline*.

The possible amount of sway in any span is also dependent on the sag in that span of the *distribution powerline* at the time.

Further Details

To obtain details on the actual amount of sag and sway for *distribution powerlines*, contact the relevant *Distribution Network Service Provider* in your area.