

PRESCRIBED BURNING — FUEL LOADS

1455. Hon Dr Brad Pettitt to the parliamentary secretary to the Minister for Environment:

The Forest Management Plan and Department of Biodiversity Conservation and Attractions (DBCA) Website state that time since fire is used as a proxy for fuel loads in DBCA managed Lands, I ask:

- (a) does the Department consider that fuel loads in unburned forests continue to increase indefinitely as a function of time since last fire event;
- (b) if no to (2), what does the Department consider naturally occurs with fuel loads in each of the below main forest types following fire, after 20, 30 and 50 years:
 - (i) Jarrah/marri;
 - (ii) Tingle;
 - (iii) Karri;
 - (iv) Coastal heath;
 - (v) Peppermint woodland;
 - (vi) Tuart forest; and
 - (vii) Wandoo woodland;
- (c) at what age since fire does the department consider that fuel loads naturally begin to decline (if at all) in the forest types identified above;
- (d) Can the Minister identify what areas of DBCA managed lands are in the following fire age classes:
 - (i) 0–10 years;
 - (ii) 10–20 years;
 - (iii) 20–30 years;
 - (iv) 30–40 years;
 - (v) 40–50 years; and
 - (vi) 50+ years;
- (e) how many fuel load assessments have been undertaken by DBCA in each of the above age-classes in the last 5 years; and
- (f) can the Minister table the results of the assessments in (e)?

Hon Darren West replied:

- (a) No.
- (b) The Department of Biodiversity, Conservation and Attractions (DBCA) considers fuel load to correspond to the mass of flammable fuels and this is typically assessed in tonnes per hectare (t/ha) of surface fuels and forest litter less than six millimetres in diameter. Fuel load is not used in any assessment of fire danger or fire spread potential in coastal heath and peppermint woodlands by DBCA. The height and cover of the fuel stratum are used. For this reason, no estimate is provided for peppermint woodlands or coastal heath.
 - (i) Jarrah/marri;

20 years	13–25 t/ha.
30 years	13–25 t/ha.
50 years	13–25 t/ha.
 - (ii) Tingle;

20 years	34 t/ha.
30 years	34 t/ha.
50 years	34 t/ha.
 - (iii) Karri;

20 years	34 t/ha.
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| | 30 years | 34 t/ha. |
| | 50 years | 34 t/ha. |
- (iv) Coastal heath;
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| | 20 years | Not applicable. |
| | 30 years | Not applicable. |
| | 50 years | Not applicable. |
- (v) Peppermint woodland;
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| | 20 years | Not applicable. |
| | 30 years | Not applicable. |
| | 50 years | Not applicable. |
- (vi) Tuart forest; and
- | | | |
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| | 20 years | 13–25 t/ha. |
| | 30 years | 13–25 t/ha. |
| | 50 years | 13–25 t/ha. |
- (vii) Wandoo woodland;
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| | 20 years | 13–25 t/ha. |
| | 30 years | 13–25 t/ha. |
| | 50 years | 13–25 t/ha. |
- (c) DBCA does not consider that on average fuel loads naturally begin to decline in these fuel types.
- (d) The information provided covers only lands managed by DBCA in its South West, Warren, and Swan regions.
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| (i) | 0–10 years: | 1,618,962 hectares; |
| (ii) | 10–20 years: | 455,345 hectares; |
| (iii) | 20–30 years: | 163,817 hectares; |
| (iv) | 30–40 years: | 103,834 hectares; |
| (v) | 40–50 years: | 46,593 hectares; and |
| (vi) | 50+ years: | 30,390 hectares. |
- (e) Detailed fuel load measurements are taken as part of several DBCA research projects. The fire age class distribution of these fuel load assessments is as follows where between 10–20 samples of surface fuel load are destructively sampled at each site. Fuel load assessments are also completed for each planned prescribed burn with multiple fuel assessment transects made for every approved burn prescription. Each transect generally consists of 10 fuel load measurement samples. The purpose of these assessments is to validate fuel age assumptions within prescription areas, and, as they form part of the operational planning process, the data from these assessments is retained within each prescription.
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| (i) | 0–10 years: | 112 sites; |
| (ii) | 10–20 years: | 47 sites; |
| (iii) | 20–30 years: | 27 sites; |
| (iv) | 30–40 years: | 26 sites; |
| (v) | 40–50 years: | 19 sites; |
| (vi) | 50+ years: | 26 sites. |
- (f) The assessments relate to several projects, with many the subject of ongoing research, and the results will be available when fully curated and appropriate for release or when published. Results from one assessment project can be found in Tangney R, Miller RG, Fontaine JB, Veber WP, Ruthrof KX and Miller BP. (2022) Vegetation structure and fuel dynamics in fire-prone, Mediterranean-type Banksia woodlands. *Forest Ecology and Management* 505: 119891 doi 10.1016/j.foreco.2021.119891
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