

Approved Conservation Advice
(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

Approved Conservation Advice for
Petrophile sp. Whicher Range (G.J. Keighery 11790) WA Herbarium (Laterite
Petrophile)

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

Following taxonomic revision, the name of this species has changed and is listed under the EPBC Act as at 8 June 2013 as:

Petrophile latericola

Description

Petrophile sp. Whicher Range (G.J. Keighery 11790) WA Herbarium, Family Proteaceae, and also known as Laterite *Petrophile*, Ironstone *Petrophile* and Ironstone Pixie Mop, is an upright, single-stemmed, open shrub growing between 40 cm and 1.5 m high and approximately 40 cm wide, with few branches. Its hard, linear leaves are 15–50 mm long, circular in cross-section, end in a rigid, sharp point, and are held erect and close to the stem. The species has small, rounded inflorescences at the end of the branchlets, with numerous overlapping brown bracts at their base. The flowers are bright yellow, hairy and about 20 mm long. An erect, yellow pollen presenter, 3–5 mm long, has a hairy brush near the tip. The fruiting heads, up to 20 mm long, are rounded. Flowering occurs from October to November (Brown et al., 1998; Phillimore et al., 2001).

Laterite *Petrophile* has longer, spreading leaves and more floriferous inflorescences than Sandplain Pixie Mop (*Petrophile brevifolia*), which is a low spreading multi-stemmed shrub that regenerates from rootstock (Brown et al., 1998; Williams et al., 2001).

This species is also known by the unpublished name *Petrophile latericola* ms (see CPBR, 2008).

Conservation Status

Laterite *Petrophile* is listed as **endangered**. This species is eligible for listing as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed as endangered under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The species is also listed as declared rare flora under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Laterite *Petrophile* is endemic to Western Australia and is known from three populations in the south of the Swan Coastal Plain, east of Busselton. The populations occur in a state forest, on a railway reserve and on an adjoining road verge. It is estimated that 200 mature plants make up the three populations. The extent of occurrence is estimated to be 4.1 km² with an area of occupancy estimated to be less than 0.05 km². There is evidence to indicate a decline in the area of occupancy, as the species can no longer be located at one of the populations on a

railway reserve. The species' distribution is highly restricted, though not severely fragmented (DEC, 2008). This species occurs within the South West (Western Australia) Natural Resource Management Region.

This species inhabits both tall and low heath on winter-wet flats of red sandy clay over ironstone with Teatree (*Pericalymma ellipticum*), Fringed Regelia (*Regelia ciliata*) and a number of other species that are declared rare flora in Western Australia (Brown et al., 1998; Phillimore et al., 2001).

The distribution of this species overlaps with the "Shrubland on the southern Swan Coastal Plain Ironstones" EPBC Act-listed threatened ecological community.

Threats

The main identified threats to Laterite Petrophile are dieback caused by *Phytophthora cinnamomi*; inappropriate fire regimes; weeds; and road, rail, drainage channel and firebreak maintenance activities.

All three populations of Laterite Petrophile are threatened by dieback. Although it has not been confirmed, field observations suggest that the species is highly susceptible to the disease.

Inappropriate fire regimes would affect the viability of the populations as the species appears to germinate from seed following fire. Therefore, the seed bank would be rapidly depleted if fires recurred before regeneration or prevented juvenile plants from reaching maturity and replenishing the soil seed bank. However, it is likely that occasional fires are required for reproduction of the species.

As two of the three populations occur on road verges and railway reserves, these populations are vulnerable to damage caused by maintenance activities; a plant was removed by road grading in recent years.

Weed invasion is a threat to all three populations: weeds suppress early plant growth by competing for soil moisture, nutrients and light, and they exacerbate grazing pressure and increase fire hazard due to the easy ignition of high fuel loads, which are produced annually by many grass weed species (Phillimore et al., 2001; Williams et al., 2001; DEC, 2008).

The main potential threat to Laterite Petrophile is hydrological changes. Extensive clearing for agriculture in the area is likely to have increased surface run-off and recharge of the groundwater. Waterlogging and salinity require monitoring (Phillimore et al., 2001; DEC, 2008).

Research Priorities

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- More precisely assess population size, distribution, ecological requirements (including fire regimes to maintain population viability) and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

- Investigate the impacts of dieback caused by *Phytophthora cinnamomi*, including control techniques for the species and its habitat.

Regional and Local Priority Actions

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of Laterite Petrophile.

Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Identify populations of high conservation priority.
- Ensure road widening, rail, drainage channel and firebreak maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where Laterite Petrophile occurs do not adversely impact on known populations.
- Manage any changes to hydrology that may result in changes to water table levels and/or increased run-off, salinity, sedimentation or pollution.
- Manage any disruptions to water flows.
- Minimise adverse impacts from land use at known sites.
- Investigate formal conservation arrangements, management agreements and/or covenants on private land, and for Crown and private land investigate inclusion in reserve tenure if possible.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to Laterite Petrophile, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to Laterite Petrophile, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Laterite Petrophile.

Fire

- Develop and implement a suitable fire management strategy for Laterite Petrophile.
- Identify appropriate intensity and interval of fire to promote seed germination and/or vegetation regeneration.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Diseases, Fungi and Parasites

- Develop and implement suitable hygiene protocols to protect known sites from outbreaks of dieback caused by *Phytophthora cinnamomi*.
- If necessary, implement appropriate management actions to minimise the adverse impacts of existing *Phytophthora cinnamomi* infestations.

Conservation Information

- Raise awareness of Laterite Petrophile within the local community. Providing fact sheets to property owners/land managers and organise field days in conjunction with known industry or community interest groups. This could potentially lead to further sightings of the species.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

This list does not necessarily encompass all actions that may be of benefit to *Laterite Petrophile*, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

Existing Plans/Management Prescriptions that are Relevant to the Species

- Western Australia Wildlife Program No. 33: *Declared Rare & Poorly Known Flora in the Central Forest Region* (Williams et al., 2001), and
- Threat Abatement Plan for Dieback Caused by the Root-Rot Fungus *Phytophthora cinnamomi* (EA, 2001).

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

Brown, A, Thomson-Dans, C & Marchant, N (eds) 1998, *Western Australia's Threatened Flora*, Department of Conservation and Land Management, Western Australia.

Centre for Plant Biodiversity Research 2008, *Australian Plant Census, IBIS database*, viewed 29 September 2008, <http://www.anbg.gov.au/cgi-bin/apni?taxon_id=259408>.

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Environment Australia (EA) 2001, *Threat Abatement Plan for Dieback caused by Root-Rot Fungus Phytophthora cinnamomi*, Environment Australia, viewed 30 May 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/phytophthora/index.html>>.

Phillimore, R, Soutar, M & English, V 2001, *Ironstone Petrophile (Petrophile latericola ms) Interim Recovery Plan No. 93 2001-2004*, Department of Conservation and Land Management.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia* (2nd ed.), Australian Network for Plant Conservation, Canberra.

Williams, K, Horan, A, Wood, S & Brown, A 2001, *Declared Rare & Poorly Known Flora in the Central Forest Region*, Western Australia Wildlife Management Program No. 33, Department of Conservation and Land Management, Western Australia.