ROUND-LEAFED HONEYSUCKLE

(*LAMBERTIA ORBIFOLIA* SUBSP. *ORBIFOLIA* MS)

INTERIM RECOVERY PLAN

2002-2007

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Photograph: A. Brown

February 2002

Department of Conservation and Land Management
Western Australian Threatened Species and Communities Unit (WATSCU)
PO Box 51, Wanneroo, WA 6946

Government of Western Australia
DEPARTMENT OF Conservation AND LAND MANAGEMENT Conserving the nature of WA
Natural Heritage Trust Helping Communities Helping Australia

FOREWORD

Interim Recovery Plans (IRPs) are developed within the framework laid down in Department of Conservation and Land Management (the Department) Policy Statements Nos. 44 and 50.

IRPs outline the recovery actions that are required to urgently address those threatening processes most affecting the ongoing survival of threatened taxa or ecological communities, and begin the recovery process.

The Department is committed to ensuring that Critically Endangered taxa are conserved through the preparation and implementation of Recovery Plans or Interim Recovery Plans and by ensuring that conservation action commences as soon as possible and always within one year of endorsement of that rank by the Minister.

This Interim Recovery Plan will operate from February 2002 to January 2007 but will remain in force until withdrawn or replaced. It is intended that, if the taxon is still ranked Critically Endangered, this IRP will be replaced by a full Recovery Plan after five years.

This IRP was approved by the Acting Director of Nature Conservation on 24 September, 2002. The provision of funds identified in this Interim Recovery Plan is dependent on budgetary and other constraints affecting the Department, as well as the need to address other priorities.

Information in this IRP was accurate at February 2002.

SUMMARY

Scientific Name:	***Lambertia orbifolia* subsp. *orbifolia* ms**	**Common Name:**	Round-leafed Honeysuckle
Family:	Proteaceae	**Flowering Period:**	November to May
Dept Region:	South Coast	**Dept District:**	Albany
Shire:	Plantagenet	**Recovery Team:**	Albany District Threatened Flora Recovery Team (ADTFRT)

Illustrations and/or further information: Brown, A., Thomson-Dans, C. and Marchant, N. (Eds). (1998) *Western Australia's Threatened Flora*. Department of Conservation and Land Management, Western Australia;

Current status: Following the splitting of *Lambertia orbifolia* into two subspecies in September 1999, the subsp. *orbifolia* ms was ranked as Critically Endangered (CR). It currently meets World Conservation Union (IUCN, 2000) Red List Category 'CR' under criteria B2ab(ii,iii,v) due to it being known from just three populations and a continuing decline in number of individuals, area and quality of habitat. The main threats are disease, grazing, road and track maintenance, weed invasion and inappropriate fire regimes.

Habitat requirements: *Lambertia orbifolia* subsp. *orbifolia* ms is endemic to Western Australia where it is found only in the Narrikup area, growing in Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*) and *Banksia* woodland on grey/brown/white gravelly, sandy, loam over ironstone.

Critical habitat: The critical habitat for *Lambertia orbifolia* subsp. *orbifolia* ms comprises the area of occupancy of the known populations; similar habitat within 200 metres of known populations; corridors of remnant vegetation that link populations and additional nearby occurrences of similar habitat that do not currently contain the subspecies but may be used for translocations.

Existing Recovery Actions: The following recovery actions have been or are currently being implemented -

1. Land managers and adjacent landowners have been made aware of the location of the *Lambertia orbifolia* subsp. *orbifolia* ms and its threatened status.
2. Declared Rare Flora (DRF) markers have been installed at Population 1 and subpopulations 2a, 2b and 3a.
3. Dashboard stickers and posters that illustrate DRF markers and describe their purpose have been produced and distributed.
4. Approximately 1356 seeds were collected from Population 1 between 1985 and 1996. During the same period a further 2237 seeds were collected from Population 2. These seeds are stored in the Department's Threatened Flora Seed Centre (TFSC) at -18°C.
5. Forty-five out of 51 (88%) of germinants received by the Botanic Garden and Parks Authority (BGPA) from the TFSC have survived with another planting having 100% survival.
6. An experimental translocation was initiated in 1998 and continued in 1999 and 2000. Three treatments were tested, light mulch, thick mulch and gro-cones. Monitoring has been undertaken every two months.
7. L. Sage from Curtin University undertook an Honours project on *Lambertia orbifolia*.
8. Research on the genetic structure and mating systems of *Lambertia orbifolia* was undertaken by Science Division between 1996 and 1997.
9. Hand spraying of phosphite, for the control of *Phytophthora cinnamomi*, was undertaken at Population 1 and 2 in autumn/winter of 1994 and 1995.
10. An article and drawing of *Lambertia orbifolia* subsp. *orbifolia* ms was placed in the Albany Advertiser and Narrikup News in April 2000.
11. Staff from the Department's Albany District attended the Department of Agriculture's, Wilson Inlet Catchment field day and gave an oral presentation on *Lambertia orbifolia* subsp. *orbifolia* ms and provided the Community Landcare Coordinator with posters for the area.
12. Subpopulations 2a and 2b have been fenced. A dog-leg was put in by the private property owner so that the fence did not go through the centre of the population.
13. Staff from the Department's Albany District Office regularly monitor all populations in relation to the impact of *Phytophthora cinnamomi* and effectiveness of phosphite application.
14. The Albany District Threatened Flora Recovery Team (ADTFRT) is overseeing the implementation of this IRP and will include it in its annual report to the Department's Corporate Executive and funding bodies.

IRP Objective: The objective of this Interim Recovery Plan is to abate identified threats and maintain or enhance *in situ* populations to ensure the long-term preservation of the subspecies in the wild.

Recovery criteria
Criteria for success: The number of individuals within populations and/or the number of populations have increased.
Criteria for failure: The number of individuals within populations and/or the number of populations have decreased.

Recovery actions

1. Coordinate recovery actions.
2. Apply phosphite.
3. Install fencing.
4. Propagate plants for translocation.
5. Undertake further translocations
6. Implement weed control.
7. Develop and implement a fire management strategy.
8. Monitor populations
9. Conduct further surveys.
10. Collect seed.
11. Liaise with land managers.
12. Achieve long-term protection of habitat.
13. Obtain biological and ecological information.
14. Promote awareness.
15. Write a full Recovery Plan.

1. BACKGROUND

History

C.A. Gardner described *Lambertia orbifolia* in 1964 from a collection made from the Narrikup area by K.R. Newbey in the same year. The specific name, derived from the Latin *orbis*, refers to the rounded leaves. The species was subsequently also found in the Scott River area some 200 km to the south-west. Due to this disjunction it was thought that plants from the two areas may represent two subspecies. In 1999 research was conducted and, based on differences found in the genetic structure between plants in the two areas (Byrne *et al.*, 1999; Coates & Hamley, 1999), *L. orbifolia* was split into two subspecies. These being *L. orbifolia* subsp. *orbifolia* ms and *L. orbifolia* subsp. Scott River Plains (L.W. Sage 684).

Surveys undertaken by Departmental staff and volunteers have resulted in the discovery of two new populations. Currently, *Lambertia orbifolia* subsp. *orbifolia* ms is known from three populations (plus a fourth translocated population) containing a total of around 438 plants. Some populations are in decline from fungal pathogens, primarily dieback (*Phytophthora cinnamomi*).

Description

Lambertia orbifolia subsp. *orbifolia* ms is an erect shrub or small tree, up to four metres high with distinctive leaves that are held in opposite pairs or in whorls of three. The leaves, which are more or less circular or broadly elliptic, are 1.2 to five centimeters long and wide. Heads of four red flowers, each about five to six centimetres long, are surrounded by a whorl of overlapping bracts. Flowering occurs throughout the year, but is mainly between November and May (Brown *et al.*, 1998).

Lambertia orbifolia subsp. *orbifolia* ms can be distinguished from *L. orbifolia* subsp. Scott River Plains (L.W. Sage 684) by its inflorescence, which has a shorter, thinner bract (personal communication G. Keighery [1]). *L. orbifolia* subsp. *orbifolia* ms is closely related to *L. inermis* but differs in its larger, hairier perianth, narrower, truncate bracts and much broader sessile leaves (Gardner, 1964).

Distribution and habitat

Lambertia orbifolia subsp. *orbifolia* ms is endemic to Western Australia where it is found in the Narrikup area. Habitat is Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*) and *Banksia* woodland on grey/brown/white gravelly, sandy, loam over ironstone. Associated species include *Eucalyptus marginata*, *Corymbia calophylla*, *Banksia grandis*, *Agonis hypericifolia*, *Nuytsia floribunda*, *Hakea ferruginea*, *Agonis parviceps*, *Anarthria prolifera*, *Bossiaea ornata*, *Leucopogon verticillatus*, *Isopogon formosus*, *Xanthorrhoea preissii*, *Hakea varia*, *Adenanthos obovatus*, *Eucalyptus staeri* and *Xanthorrhoea platyphylla*.

Critical habitat

Critical habitat is habitat identified as being critical to the survival of a listed threatened species or listed threatened ecological community. Habitat is defined as the biophysical medium or media occupied (continuously, periodically or occasionally) by an organism or group of organisms or once occupied (continuously, periodically or occasionally) by an organism, or group of organisms, and into which organisms of that kind have the potential to be reintroduced. (*Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)).

[1] Greg Keighery, Principal Research Scientist, Science Division

The critical habitat for *Lambertia orbifolia* subsp. *orbifolia* ms comprises:

- the area of occupancy of the known populations,
- areas of similar habitat ie. Jarrah, Marri and Banksia woodland on grey/brown/white gravelly, sandy, loam over ironstone, within 200 metres of known populations (these provide potential habitat for natural recruitment),
- corridors of remnant vegetation that link populations (these are necessary to allow pollinators to move between populations),
- additional nearby occurrences of similar habitat ie. Jarrah, Marri and Banksia woodland on grey/brown/white gravelly, sandy, loam over ironstone that do not currently contain the subspecies (these represent possible translocation sites).

Biology and ecology

Lambertia orbifolia has populations in two widely separated areas (Narrikup and Scott River Plains). Research on the genetic structure and mating system of the species has shown that these populations have been isolated for quite some time and that this has led to independent evolution. The two forms should therefore be recognised as distinct subspecies (Byrne *et al*., 1999; Coates & Hamley, 1999).

Results from an Honours project undertaken by L. Sage[2] has shown that *Lambertia orbifolia* subsp. *orbifolia* ms (Narrikup) differs from *L. orbifolia* subsp. Scott River Plains in aspects of flowering, plant longevity and follicle production. *L. orbifolia* subsp. *orbifolia* ms plants also have fewer inflorescences. The subspecies is an obligate re-seeder (non sprouter) and is nonserotinous (seed is continually being dehisced). Large quantities of seed do not appear to be stored within the leaf litter or soil and may be eaten by granivores soon after being dehisced (Sage & Lamont, 1994).

The subspecies is killed by fire which appears to be a stimulus for recruitment from seed (Sage & Lamont, 1994). Recruitment is also known to occur in low numbers in unburnt areas (personal communication S Barrett[3]). Its response to soil disturbance and weed invasion is unknown although field observations suggest that weed invasion probably affects recruitment (Obbens & Coates, 1997).

As yet, no testing has been undertaken by Science Division staff in relation to *Phytophthora cinnamomi* susceptibility (personal communication C. Crane[4]). However, field observations suggest that the subspecies is very susceptible to the disease (CALM Vegetation Health Service). Keighery (1992) has also identified the subspecies as being highly susceptible.

Threats

Following the splitting of *Lambertia orbifolia* into two subspecies in September 1999, the subsp. *orbifolia* ms was ranked as Critically Endangered (CR). It currently meets World Conservation Union (IUCN, 2000) Red List Category 'CR' under criteria B2ab(ii,iii,v) due to it being known from just three populations and a continuing decline in number of individuals, area and quality of habitat. The main threats are disease, grazing, road and track maintenance, weed invasion and inappropriate fire regimes.

- **Disease** is a threat to all populations. Subpopulations 3a and 3b are infected with *P. cinnamomi* with some deaths occurring. Dieback is also downslope of Subpopulations 2d and 2e. Aerial canker (*Cryptodiaporthe* sp., *Diplodina* sp.) has been visually identified at Populations 1 and 2.

- **Grazing.** Areas of private property that contain *Lambertia orbifolia* subsp. *orbifolia* ms are not currently stocked. However, these populations are potentially at risk from possible future grazing and trampling by stock.

- **Road and firebreak maintenance** threatens Population 1 and subpopulations 2a, 2b and 3a. Construction of drainage channels, grading and other road maintenance activities impact on the subspecies in these areas. Mowing of road verge vegetation by Shires to improve visibility can affect plants and/or associated habitat.

- **Weed invasion** is a minor threat current to all road reserve populations. Weeds suppress early plant growth by competing for soil moisture, nutrients and light. They also exacerbate grazing pressure and increase the fire hazard due

[2] Lee Sage, Curtin University of Technology, Perth
[3] Sarah Barrett, Flora Officer, the Department's Albany District
[4] Colin Crane, Senior Technical Officer, Science Division

to the easy ignition of high fuel loads, which are produced annually by many grass weed species (Lynch 1987; Saunders *et al*. 1987; Taylor 1987).

- **Inappropriate fire** may affect the viability of populations. Seed of *Lambertia orbifolia* subsp. *orbifolia* ms germinates following fire and the soil seed bank would rapidly be depleted if fires recurred before juvenile plants reached maturity. However, it is likely that occasional fires are needed for recruitment. Further investigation is required and will be addressed in management action 14.

Summary of population information and threats

Pop. No. & Location	Land Status	Year/No. plants		Condition	Threats
1. WNW Narrikup	Shire Road reserve	1999	95+ (26+) [15+ dead]	Moderate	Disease, fire, road maintenance, weeds
2a. WNW Narrikup	Shire Road reserve	1995 1999	*23 (7) [3 dead] 13	Moderate	Disease, fire, road maintenance, weeds
2b. WNW Narrikup	Private property	1995 1999	*see 2a 2 [1 dead]	Moderate	Disease, firebreak maintenance, fire, grazing, weeds
2c. WNW Narrikup	Private property	1995 1999	*see 2a 3	Moderate	Disease, fire, grazing, weeds
2a. WNW Narrikup	Private property	1999	150+ (300+) [10+ dead]	Healthy	Disease, fire, grazing, weeds
2b. WNW Narrikup	Private property	2000	100+	Healthy	Disease, fire, weeds
3a. WNW Narrikup	Shire Recreation Reserve	1997 2000	24 50+ (200+)	Healthy	Disease (dieback infested), firebreak maintenance, fire, weeds
3b. WNW Narrikup	Private property	2000	(5)	Healthy	Disease (dieback infested), fire, weeds
**4. SW Narrikup	Conservation Reserve (Flora & Fauna)	1999 2000	540 577	Healthy	

Note: * total for both subpopulations combined. Numbers in brackets ( ) = seedlings. ** Population 4 = a translocated population.

Guide for decision-makers

Section 1 provides details of current and possible future threats. Developments in the immediate vicinity of any of the populations or within the defined critical habitat of the subspecies require assessment. Developments should not be approved unless the proponents can demonstrate that they will not have a significant impact on the subspecies, its habitat or potential habitat, or have the potential to spread or amplify dieback caused by the plant pathogen *Phytophthora cinnamomi*.

2. RECOVERY OBJECTIVE AND CRITERIA

Objectives

The objective of this Interim Recovery Plan is to abate identified threats and maintain or enhance *in situ* populations to ensure the long-term preservation of the subspecies in the wild.

Criteria for success: The number of individuals within populations and/or the number of populations have increased.
Criteria for failure: The number of individuals within populations and/or the number of populations have decreased.

3. RECOVERY ACTIONS

Existing recovery actions

Private property owners and the Shire have been formally notified of the location and threatened nature of the subspecies. This notification details the Declared Threatened status of the taxon and associated legal responsibilities.

Declared Rare Flora (DRF) markers have been installed at Population 1 and Subpopulations 2a, 2b and 3a. These alert workers to the presence of the threatened flora and help prevent accidental damage during maintenance operations. An awareness of these markers is being promoted to Shires with dashboard stickers and posters produced and distributed. These illustrate DRF markers, inform of their purpose and provide a contact telephone number to use if such a marker is encountered.

Approximately 1356 seeds were collected from Population 1 between 1985 and 1996. During the same period a further 2237 seeds were collected from Population 2. These seeds are stored in the Department's Threatened Flora Seed Centre (TFSC) at -18°C. Forty-five out of 51 (88%) of germinants received by the Botanic Garden and Parks Authority (BGPA) from the TFSC have survived with another planting having 100% survival (personal communication A. Shade[5]).

In 1998, 216 seedlings of *Lambertia orbifolia* subsp. *orbifolia* ms were planted into a Conservation Reserve in Narrikup, in accordance with an approved Translocation Proposal (Coates *et al*., 1998). The seedlings originated from seed that was collected by the TFSC and grown by the BGPA. The translocation is being conducted on an experimental basis, and will provide information about effective techniques for future translocations. In 1998, three treatments were tested, light mulch, thick mulch and gro-cones. Monitoring included the number of surviving germinants, height, crown width, reproductive state, number of inflorescences and follicles, presence of second generation plants and general health and was undertaken every two months. Further planting's were subsequently undertaken and included 358 plants (82 from cuttings propagated at the BGPA and 248 from seed) in 1999 and 69 plants in 2000. Many of these plants were caged to protect them from grazing. Preliminary monitoring data of seedlings planted in 1998 suggests that there was little difference in the survival between the treatments, only on the rate of growth. Those in gro-cones grew taller and wider than those with thick mulch (Monks & Coates, 2000).

An Honours project on *Lambertia orbifolia* was undertaken by L. Sage from Curtin University. The research objectives were to:

1. Assess plant size and population age structure.
2. Assess flowering and factors affecting seed production, viability and longevity.
3. Assess population recruitment patterns with particular reference to the impact of fire and plant disease.
4. Assess population health in relation to fungal pathogens and insect attack.

Staff of Science Division undertook research on the genetic structure and mating systems of *Lambertia orbifolia* between 1996 and 1997.

To control *Phytophthora cinnamomi*, Populations 1 and 2 were sprayed with phosphite in autumn/winter 1994 and 1995. At this time, new plants were discovered in several areas and these were sprayed in August 1995. Due to the continuing threat of dieback the Department's Albany District staff will continue spraying these areas as part of its phosphite spraying program. Staff from the Departments Albany District Office regularly monitors populations in relation to the impact of *Phytophthora cinnamomi* and the effectiveness of phosphite application.

An article and drawing of the *Lambertia orbifolia* subsp. *orbifolia* ms was placed in the Albany Advertiser and Narrikup News in April 2000.

Staff from the Department's Albany District attended the Department of Agriculture's, Wilson Inlet Catchment field day and gave an oral presentation on *Lambertia orbifolia* subsp. *orbifolia* ms and provided the Community Landcare Coordinator with posters.

Subpopulations 2a and 2b have been fenced.

The Albany District Threatened Flora Recovery Team (ADTFRT) is overseeing the implementation of this IRP and will include it in its annual report to the Department's Corporate Executive and funding bodies.

Future recovery actions

Where populations occur on lands other than those managed by the Department, permission has been or will be sought from the appropriate land managers prior to recovery actions being undertaken.

1. Coordinate recovery actions

The ADTFRT will continue to oversee the implementation of recovery actions for *Lambertia orbifolia* subsp. *orbifolia* ms and will include information on progress in its annual report to the Department's Corporate Executive and funding bodies.

Action: Coordinate recovery actions
Responsibility: The Department (Albany District) through the ADTFRT

[5] Amanda Shade, Horticulturalist, Botanic Garden and Parks Authority

Cost: $400 per year.

2. Apply phosphite

Both *Lambertia orbifolia* subsp. *orbifolia* ms and the community in which it grows are suspected to be susceptible to *Phytophthora cinnamomi*. The department will continue applying phosphite to those areas that are infected. Application to the whole associated community will have the added benefit of protecting a number of other threatened plant species in the area and will help the community as a whole.

Action: Apply phosphite
Responsibility: The Department (Albany District, Dieback Disease Coordinator) through the ADTFRT
Cost: $13,900 in first third and fifth years.

3. Install fencing

Fences will be erected around Subpopulations 2b, 2c, 2d and 2e and will include a buffer of surrounding habitat to protect *Lambertia orbifolia* subsp. *orbifolia* ms from possible future grazing.

Action: Install fencing
Responsibility: The Department (Albany District) through the ADTFRT
Cost: $5,900 in the first year.

4. Propagate plants for translocation

The propagation of plants for translocation is essential as all extant populations are under threat in the wild.

Action: Propagate plants for translocation
Responsibility: The Department (Albany District, TFSC), and the BGPA through the ADTFRT
Cost: $1,400 in first and second years.

5. Undertake further translocations

As the number of extant plants is low and populations are not secure from threats, including disease and inappropriate fire, further translocations are essential for the plants long-term conservation. Although translocations are generally undertaken under full Recovery Plans, a translocation proposal has been written and approved (Coates *et al*., 1998), and implementation has begun. The Department will continue implementing this proposal under the direction of the ADTFRT. Information on the translocation of threatened animals and plants in the wild is provided in the Department's Policy Statement No. 29 *Translocation of Threatened Flora and Fauna*. All translocation proposals require endorsement by the Director of Nature Conservation.

Action: Undertake further translocations
Responsibility: The Department (Science Division Division, Albany District) through the ADTFRT
Cost: $8,700 per year for the first three years.

6. Implement weed control

Weeds are a minor threat to roadside populations. The following actions will be implemented:

1. Selection of appropriate herbicides after determining what weeds are present.
2. Controlling invasive weeds when they first emerge by hand removal or spot spraying.
3. Scheduling weed control to include spraying at other threatened flora populations within the district.

The tolerance to herbicides of other native plant species in the area of *Lambertia orbifolia* subsp. *orbifolia* ms is not known and weed control programs will be undertaken in conjunction with research.

Action: Implement weed control
Responsibility: The Department (Albany District, Science Division) through the ADTFRT
Cost: $700 per year.

7. Develop and implement a fire management strategy

It is thought that fire kills adult plants of the subspecies and regeneration is largely from seed. Frequent fire may prevent the accumulation of sufficient soil stored seed for recruitment to occur. Fire should therefore be prevented from occurring in this area at least in the short term. A fire management strategy will be developed to determine fire control measures and fire frequency.

Action: Develop and implement a fire management strategy
Responsibility: The Department (Albany District) through the ADTFRT
Cost: $2,300 in first year and $1,000 in subsequent years.

8. Monitor populations

Annual monitoring of factors such as habitat degradation (including the impact of dieback and the effectiveness of Phosphite application), population stability (expansion or decline), weed invasion, pollination activity, seed production, recruitment, longevity and predation is essential.

Action: Monitor populations
Responsibility: The Department (Albany District) through the ADTFRT
Cost: $1,800 per year.

9. Conduct further surveys

Further surveys supervised by departmental staff and with assistance from local naturalists and wildflower society members will be conducted during the plants flowering period (November to May).

Action: Conduct further surveys
Responsibility: The Department (Albany District) through the ADTFRT
Cost: $3,200 per year.

10. Collect seed

Preservation of germplasm is essential to guard against possible future extinction of wild populations. Seed collections are also needed to propagate plants for translocations. Seed has been collected from Populations 1 and 2 but additional seed is required from all populations.

Action: Collect seed
Responsibility: The Department (Albany District, TFSC) through the ADTFRT
Cost: $2,700 per year for the first three years.

11. Liaise with land managers

Staff from the Department's Albany District will continue liaison with land managers and adjacent landowners to ensure that populations are not damaged or destroyed accidentally. Due to the potential susceptibility of the plants habitat to dieback, the need for hygiene procedures will be included in information provided to land managers. This will stress the need to restrict soil movement and vehicular activity in the habitat of the subspecies.

Action: Liaise with land managers
Responsibility: The Department (Albany District) through the ADTFRT
Cost: $1,200 per year.

12. Achieve long-term protection of habitat

Ways of achieving long-term protection of land on which Subpopulations 2c, 2d and 2e occur will be investigated. Possible methods of achieving this include covenanting and land purchase.

Action: Achieve long-term protection of habitat
Responsibility: The Department (Albany District) through the ADTFRT
Cost: To be determined

13. Obtain biological and ecological information

An increased knowledge of the biology and ecology of *Lambertia orbifolia* subsp. *orbifolia* ms will provide a scientific basis for its management in the wild. Investigations will include:

1. Study of the soil seed bank dynamics and the role of various fire, competition, rainfall and grazing in recruitment and seedling survival.
2. Investigating the impact of dieback and subsequent control techniques on the subspecies and its habitat.

Action: Obtain biological and ecological information
Responsibility: The Department (Science Division, Albany District) through the ADTFRT
Cost: $5,000 per year.

14. Promote awareness

The importance of biodiversity conservation and the need for the long-term protection of wild populations of the Critically Endangered species *Lambertia orbifolia* subsp. *orbifolia* ms will be promoted to the community by a publicity campaign through the local print and electronic media and poster displays. Formal links with local naturalist groups and interested individuals will also be encouraged. An information sheet, which includes a description of the plant, its habitat type, threats, management actions and photos will be produced.

Due to the susceptibility of the habitat and this species to dieback, the need for dieback hygiene procedures will be included in information provided to visitors to sites where the species occurs.

Action: Promote awareness
Responsibility: The Department (Albany District, Corporate Relations) through the ADTFRT
Cost: $1,100 in first year and $700 in subsequent years.

15. Write a full Recovery Plan

At the end of the fourth year of the five-year term of this Interim Recovery Plan, the need for further recovery will be assessed. If ranked as Critically Endangered at that time a full Recovery Plan will be developed that prescribes actions required for its long-term recovery.

Action: Write a full Recovery Plan
Responsibility: The Department (WATSCU, Albany District) through the ADTFRT
Cost: $18,100 in the fifth year.

4. TERM OF PLAN

This Interim Recovery Plan will operate from February 2002 to January 2007 but will remain in force until withdrawn or replaced. It is intended that, if the taxon is still ranked Critically Endangered, this IRP will be replaced by a full Recovery Plan after five years.

5. ACKNOWLEDGMENTS

The following people have provided assistance and advice in the preparation of this Interim Recovery Plan:

Sarah Barrett	Flora Officer, the Department's Albany District
Colin Crane	Senior Technical Officer, Science Division
Anne Cochrane	Manager, the Department's Threatened Flora Seed Centre
Greg Keighery	Principal Research Scientist, Science Division
Amanda Shade	Horticulturalist, Botanic Garden and Parks Authority
Leigh Sage	Former Honours student, Curtin University of Technology

We would like to thank the staff of the W.A. Herbarium for providing access to Herbarium databases and specimen information, and the Department's Wildlife Branch for their extensive assistance.

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7. TAXONOMIC DESCRIPTION

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Lambertia orbifolia subsp. *orbifolia* ms is a shrub to 3 m tall, apparently lacking lignotubers. Branches are erect, spreading or arching; young branches brown, villous to pilose. Leaves opposite or rarely in whorls of 3, sessile or shortly petiolate; lamina orbicular, 15 to 20 mm diameter, obtuse slightly cordate and cupped, entire, glabrous. Conflorescence 4 to 6 flowered. Flowers zygomorphic. Perianth 40 to 50 mm long, red, dilated about middle, brown-hirsute; abaxial suture deepest. Hypogynous glands 4, free. Ovary densely brown-pilose; style glabrous above, sparsely pilose in lower half. Fruit asymmetric, 7 to 10 mm diameter, flattened; beak oblique;

horns scarcely developed; sides smooth. Seeds 2, asymmetric, cuneate, c. 10 mm long, c. 6 mm wide, with a narrow wing from apex to base along one side.

Australian Government

Department of the Environment and Heritage

ADDENDUM

Round-leafed Honeysuckle (*Lambertia orbifolia* subsp. *orbifolia ms*) Interim Recovery Plan 2002-2007

In adopting this plan under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the Minister for the Environment and Heritage has approved the following modifications.

Critical Habitat

The plan identifies a broad area as critical habitat, including buffer zones of a set distance around known populations. The Threatened Species Scientific Committee does not necessarily believe that such an area qualifies as habitat critical to the survival of the species, as defined in the EPBC Act.

Recovery Criteria

For the purposes of reviewing this recovery plan under the EPBC Act, the Recovery Criteria are amended to read as follows:

Criteria for success: The number of individuals within populations and/or the number of populations have increased over the period of the plan's adoption under the EPBC Act.
Criteria for failure: The number of individuals within populations and/or the number of populations have decreased over the period of the plan's adoption under the EPBC Act.