

## Threatened Species

# Action Plan No.8

## Button Wrinklewort *Rutidosia leptorrhynchoidea*

In accordance with section 21 of the *Nature Conservation Act 1980*, the **Button Wrinklewort (*Rutidosia leptorrhynchoidea*)** was declared an **endangered** species on 15 April 1996 (formerly Determination No. 29 of 1996 and currently Determination No. 7 of 1998). Section 23 of the Act requires the Conservator of Flora and Fauna to prepare an Action Plan in response to each declaration.

This is the Action Plan for the:

## Button Wrinklewort *Rutidosia leptorrhynchoidea*

### Preamble

The *Nature Conservation Act 1980* establishes the ACT Flora and Fauna Committee with responsibilities for assessing the conservation status of the ACT's flora and fauna and the ecological significance of potentially threatening processes. Where the Committee believes that a species or ecological community is threatened with extinction or a process is an ecological threat, it is required to advise the Minister for the Environment, Land and Planning, and recommend that a declaration be made accordingly.

Flora and Fauna Committee assessments are made on nature conservation grounds only and are guided by specified criteria as set out in its publication *Threatened Species and Communities in the ACT*, July 1995.

In making its assessment of the Button Wrinklewort, the Committee concluded that it satisfied the criteria indicated in the adjacent table.

An Action Plan is required to ensure, as far as is practicable, the identification, protection and survival of the species or the ecological community, or proposals to minimise the effect of any process which threatens any species or ecological community.

While the legal authority of this Action Plan is confined to the Australian Capital Territory, management considerations are addressed in a regional context.

### Criteria Satisfied

1.1 The species is known or suspected to occur in the ACT region and is already recognised as endangered in an authoritative international or national listing.

1.2 The species is observed, estimated, inferred or suspected to be at risk of premature extinction in the ACT region in the near future, as demonstrated by the following:

1.2.1 Current severe decline in population or distribution, from evidence based on:

1.2.1.1 direct observation, including comparison of historical and current records.

1.2.1.3 severe decline in quality or quantity of habitat.

1.2.2 Imminent risk of severe decline in population or distribution from evidence based on 1.2.1.3

1.2.4 Severely fragmented distribution for a species currently occurring over a small range or having a small area of occupancy within its range.

## Links with other Action Plans

Measures proposed in this Action Plan complement those proposed in the Action Plans for Natural Temperate Grassland, Yellow Box/Red Gum Grassy Woodland (in prep.), and component threatened species such as the Striped Legless Lizard (*Delma impar*), Eastern Lined Earless Dragon (*Tympanocryptis lineata pinguicolla*) and the Golden Sun Moth (*Synemon plana*). Action Plans are listed at the end of this document.

## Species Description and Ecology

### DESCRIPTION

The Button Wrinklewort (*Rutidosia leptorrhynchoides*) (Figure 1) is a slender perennial forb, 25 - 35 cm tall and branching mainly at the base. The leaves are narrow, dark green, ageing to yellow-green and up to 2.5 cm long, with rolled edges concealing the undersides. The stems usually die back in late summer or autumn, and the new basal leaves appear by early winter. The species has yellow button flowers (2 cm wide) from December to April.

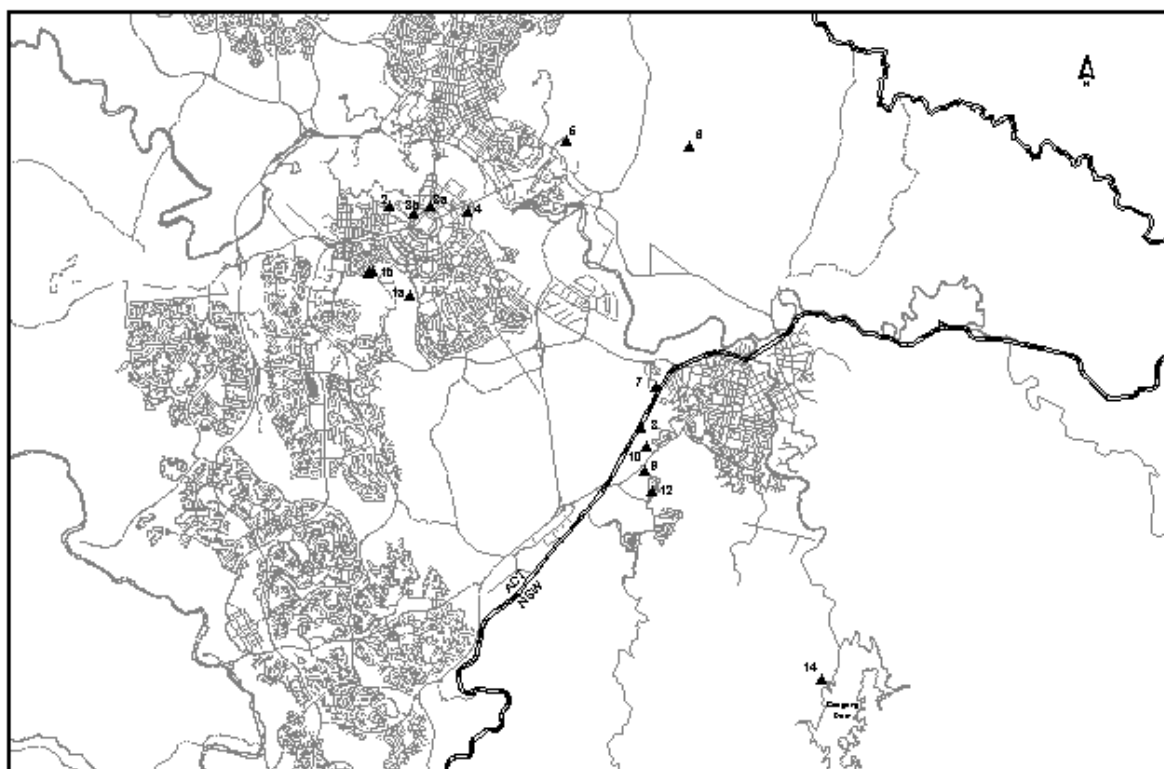


Figure 2: Map showing location of sites (▲) within the ACT region where *Rutidosia leptorrhynchoides* is known to occur. (site numbers correspond to Table 1). Map produced by Environment ACT (Wildlife Research and Monitoring).

Note: Sites 11 (along the Great Bay/Captains Flat Road) and 13 (Friday Traue Illig Stock Reserve) occur outside the area shown on this map.

Figure 1: Button Wrinklewort (*Rutidosia leptorrhynchoides*). Scale: One third natural size.

Table 1. List of Site Locations for *Rutidosia leptorrhynchoides*

Site Number and Location	Population Size	Area*	Grassland Action Plan Location No. (GAP) (where	Ecological Community	Landholder and Current Status	Other Significant Species in Vicinity
		(ha)				

appropriate)

**ACT  
SITES:**

1. Red Hill: (a) - East	3,500	0.3		woodland	Canberra Nature Park: Reserve	
1. Red Hill: (b) - North	1,300	0.5		woodland	Canberra Nature Park: Reserve	
2. Stirling Park	70,000	12.0		woodland	National Capital Authority: National Land	
3. Capital Hill: (a) - West Block	5	0.01		woodland	National Capital Authority: National Land	
3. Capital Hill: (b) - Capital/State Circle	220	1.0		woodland	National Capital Authority: National Land	
4. St Mark's, Barton	130	1.8	GAP 33	grassland	Anglican Church: Perpetual Lease	#
5. Campbell Park: - Offices	50 (1998)	3.3	GAP 27	grassland & woodland	Department of Defence: National Land	Sp, Tlp, #
6. Majura Valley East - Field Firing Range:	30,000 (1996)	3.75	GAP 28	grassland	Australian Army: National Land	Di, Sp, Tlp, #
7. Jerrabomberra Valley East: - Tharwa Road	50 (1996)	2.0	GAP 37	grassland	Canberra South District: Unleased Territory Land	
<b>NSW SITES:</b>						
8. Queanbeyan Nature Reserve	10,000	1.5		woodland	NSW National Parks & Wildlife Service: Crown Land	
9. "The Poplars"	8,000	1.0		woodland	Private land: Freehold	
10. Letchworth	450	0.4		secondary grassland	NSW Department of Housing: Crown Land	
11. Queanbeyan - Captains Flat Road	150	0.03		grassland	Yarrowlumla Shire Council: Crown Land - roadside	

12.	9	0.	woodlan	Queanbeyan	
Jerrabomberra Heights		01	d	City Council: Public Reserve	
13.	at least	3.	grasslan	Rural Lands	Di, Ks, #
Gundry Travelling Stock Reserve	95,000 (1996)	0	d	Protection Board: Crown Land	
14.	(1996)	1	grasslan	Commonwea	
Googong Foreshores		m <sup>2</sup>	d	lth: Wildlife Refuge managed by Environment ACT	

Population sizes refer to the estimated no. of plants in 1994/95, unless otherwise indicated.

Shaded areas indicate sites that are located within reserved areas.

\* = Area column refers to the area occupied by *R. leptorrhynchoides*.

Key to species - Di = *Delma impar*, Ks = *Keyacris scurra*, Sp = *Synemon plana*, Tlp = *Tympanocryptis lineata pinguicolla*,

Po = *Perunga ochracea*, # = uncommon or declining species which are not formally listed.

GAP = Grassland Action Plan Location Number - this number is used as a location reference in the Natural Temperate Grassland Action Plan (Action Plan No. 1) Its use in Action Plans for component species, such as *R. leptorrhynchoides*, indicates that the habitat of the species in question more or less coincides with the natural temperate grassland site referred to.

## DISTRIBUTION

*R. leptorrhynchoides* appears to have been formerly widespread across the westernplains of Victoria, and south-eastern New South Wales. The species has a disjunct distribution and is known from 16 populations in the ACT region (nine within the ACT, six across the border near Queanbeyan and one recently discovered near Goulburn) (Figure 2, Table 1) and nine in Victoria. Current populations range in size from five to round 95,000 plants and are often restricted to small, scattered refugia that have escaped grazing, ploughing and the application of fertilisers, for example, road margins, railway easements and cemeteries (Young 1997).

Of the nine sites occurring within the ACT, two have large populations. The larger is within Stirling Park, Yarralumla, where close to 70,000 plants have been recorded (Young and Zich unpublished data). The other, comprising about 30,000 plants, was discovered recently on the Majura Field Firing Range, although this is confined to a small area and is therefore vulnerable to damage (Crawford and Rowell 1996). Smaller populations occur on Red Hill, at Barton, on the edge of Capital Hill, near West Block and the Campbell Park Offices and near HMAS Harman, in the Jerrabomberra Valley.

In NSW, the species is known to occur naturally at six sites within the Queanbeyan area, with the largest population (10,000 plants in February 1995) being found within the Queanbeyan Nature Reserve (Young and Zich unpubl. data). Other sites occur at "The Poplars" near Jerrabomberra, Letchworth, along the slopes of Mt. Jerrabomberra, and along a roadside by the Queanbeyan-Captains Flat Road. Recently, one individual plant was found at Googong Foreshores, and further survey work will be undertaken to determine the extent of the population.

The largest known population of 95,000 plants (Young unpubl. data) was recently discovered at Gundry Reserve, a Travelling Stock Reserve and Arboretum, 5km SSE of Goulburn, NSW.

## HABITAT AND REPRODUCTIVE BIOLOGY

### HABITAT

In the ACT, *R. leptorrhynchoides* occurs on the margins of open stands of Yellow Box/Red Gum Grassy Woodland with a ground layer of various native grasses and other forbs, and extends into Natural Temperate Grassland. Soils are usually shallow stony red-brown clay loams. Occasionally, Apple Box (*Eucalyptus bridgesiana*) is also present.

*Rutidosia leptorrhynchoides* prefers an open habitat and is a poor competitor amongst tall, dense sward-forming grasses. It is found where the soil is too shallow to support the growth of plants that may rapidly overtop it, or on deeper soils where the vegetation is kept short by regular disturbance (Scarlett and Parsons 1990). It may also be adapted to the sparser *Themeda* growth found under trees in woodlands (Morgan 1995a).

## REPRODUCTIVE BIOLOGY

The population density of the species affects seed production, with sparsely distributed individuals producing fewer seeds per inflorescence than plants from denser colonies. This suggests that the species is dependent on the maintenance of the standing population for recruitment (Morgan 1995a).

In Victoria, recruitment may be limited by high summer mortality of seedlings in open microsites and by deep shading in dense, unburnt grasslands (Morgan 1995b).

The reproductive potential and viability of small remnant populations may also be limited by inbreeding and related reductions in fitness (inbreeding depression). Research using genetic markers to characterise the mating patterns of *R. leptorrhynchoides* shows evidence of increased potential for mating among relatives in populations of less than 200 plants, especially when these are isolated by more than 5 km from other populations. The demographic consequences of this are as yet unknown, but could be significant.

Reproductive capability of populations also depends on their chromosome number. Chromosome counts of *R. leptorrhynchoides* show the species to be cytologically complex. Northern populations in the ACT and NSW are diploid ( $2n=26$ ), while in the south of the range, Victorian populations are either wholly diploid, or primarily tetraploid ( $2n=44$ ), with a mix of aneuploids and even some hexaploids. Diploids produce more seed per head than tetraploids and any mating between the two ploidy levels produces few seed, all of which are triploids with low pollen fertility (Young 1997).

## Conservation Status

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*Rutidosia leptorrhynchoides* is recognised as a threatened species in the following sources:

### National

Endangered. - ANZECC Endangered Flora Network (1998).

Endangered. - ROTAP (1996).

Endangered. - Part 1, Schedule 1 of the *Endangered Species Protection Act 1992* (Commonwealth).

### Australian Capital Territory

Endangered. - Section 21 of the *Nature Conservation Act 1980*, Determination No. 7 of 1998 (formerly Determination No. 29 of 1996).

Special Protection Status Species. - Schedule 6 of the *Nature Conservation Act 1980*, Determination No. 77 of 1996.

### New South Wales

Endangered. - Part 1, Schedule 1 of the *Threatened Species Conservation Act 1995*.

### Victoria

Threatened taxon. - Schedule 2 of the *Flora and Fauna Guarantee Act 1988*.

The species is also the subject of Action Statement No. 28, prepared by the Victorian Department of Conservation and Environment.

## Threats to Populations in the ACT Region

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- **The species is at risk from habitat loss throughout its range** due to agricultural and urban development, and weed invasion.

- **Competition with other vegetation** presents a disadvantage to the species at some sites. In Victoria, "intermittent" burning of some grassland communities is recommended to maintain floristic diversity (McDougall 1987, Lunt 1990).
- **Under heavy grazing**, the species disappears because it is palatable to stock. However, intermittent grazing in late summer may not be detrimental.
- **Erosion of genetic diversity and increased inbreeding** may compromise both short and long-term population viability by reducing individual fitness and limiting the gene pool on which selection can act in the future. This applies to populations of fewer than 200 plants.

## Major Conservation Objectives

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The objective of this Action Plan is to maintain viable populations of *R. leptorrhynchoides* in functional native grassland and grassy woodland habitat in the known sites across the geographic range of the species in the ACT. This is interpreted to include the maintenance of the species' potential for evolutionary development in the wild.

This objective is to be achieved by:

- Protecting and managing the major sites where significant populations occur.
- Developing detailed management strategies to maintain or expand remaining sites while populations of *R. leptorrhynchoides* remain viable.
- Maintaining as diverse a gene pool as possible, as more evidence is coming to light about the tendency for inbreeding and subsequent sterility arising in very small populations, especially in Victoria.
- Participating on the National Recovery Team which brings together all agencies responsible for the species throughout its geographic range.
- Liaising with regional NSW agencies under the umbrella of the National Recovery Team, especially the NSW National Parks and Wildlife Service (NSW NPWS), Queanbeyan City Council and Yarrowlunla Shire Council, to preserve small areas round Queanbeyan and the Queanbeyan/Captains Flat Road.
- Negotiating with the Commonwealth to protect as much habitat on National Land as possible, in particular, Stirling Ridge and the Majura Field Firing Range.
- Continuing surveys of areas of Yellow Box/Red Gum Grassy Woodland to locate new populations.

## Conservation Issues and Intended Management Actions

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### GENERAL

The long term conservation of *R. leptorrhynchoides* depends on the retention of its native grassy habitat, which in the ACT region is the Natural Temperate Grassland and the Yellow Box/Red Gum Grassy Woodland. Both of these ecological communities have been declared endangered in the ACT and management principles for each are set out in the respective Action Plans. For *R. leptorrhynchoides*, the principal management focus will be on managing and maintaining it as a component of the grassland or woodland ecological community.

It has been suggested that for the species to persist, it requires some treatment that reduces competition from other vegetation, such as fire, high mowing or seasonal light grazing (Scarlett and Parsons 1990). However, preliminary analysis of data from recent monitoring of populations in the ACT region indicates that the maintenance of reproductive plants should be given priority over intervention aimed at increasing germination and seedling establishment. A large increase in germination would be required to offset the small increase in the mortality of adult plants which might follow treatments such as autumn burning (A. Young pers. comm.). Where management to reduce ground vegetation density at a site is desirable for other reasons (eg. maintaining species diversity in the community, fuel reduction), areas containing regenerating *R. leptorrhynchoides* stands may be excluded from the treatment, pending the results of further monitoring and research in the ACT region.

Management prescriptions also need to address a general concern about the survival of remnant populations, namely the increased random fluctuations in demographic parameters such as seedling

mortality, genetic erosion owing to genetic drift and inbreeding depression. The actual roles of these processes are poorly understood and managers are often unsure as to their long term conservation significance (Young 1997).

A suggested recovery action is to establish a seed-store and off-site conservation area to ensure maintenance of long-term genetic viability, given that a number of small populations are highly susceptible to "catastrophic" events (Briggs *et al.* 1998). The National Recovery Team anticipates that the Australian National Botanic Gardens and other institutions concerned with the long-term protection of threatened native plants will play a significant role, and will assume some responsibility for investigating these issues (Briggs *et al.* 1998).

## RESEARCH AND SURVEY

The need for information on the amount and distribution of genetic variation in the Button Wrinklewort with regard to overall management for conservation has been recently highlighted and will have implications for a nationally coordinated management approach to the species (Briggs *et al.* 1998). For instance, variations in chromosome numbers need to be taken into account when undertaking replanting or translocation, as mixing plants with different numbers of chromosomes may result in the production of infertile offspring (Young 1997).

The Centre for Plant Biodiversity Research, CSIRO Division of Plant Industry, is conducting research to develop understanding as to how habitat fragmentation is associated with genetic and demographic changes, and how these changes influence the viability of small populations (Young 1997).

The Centre is also conducting comparative demographic monitoring of large genetically diverse, outbred populations as compared with small genetically depauperate, possibly inbred populations, which is providing data on seed production, germination, seedling survivorship and adult mortality. This information will be used for developing models which will be used to predict the fate of populations under a range of management scenarios (Young 1997).

The CSIRO's research work directed towards understanding how genetic variations influence the viability of small populations, and their implications for conservation and management will be monitored for application to management of ACT sites containing the species.

Research is needed into the role of fire (including season of burning) in maintaining and increasing populations of *R. leptorrhynchoides*. This would target the effects of a range of burning frequencies on population demographics and community integrity. This research would provide a basis for a fire management regime to assist in the maintenance of populations and would have relevance to the fire management of other Natural Temperate Grassland communities (Briggs *et al.* 1998).

As an initial step, an experimental burn by CSIRO is planned for the Queanbeyan Nature Reserve which is managed by NSW NPWS. This action is in accordance with the recommendations of the National Recovery Team who proposed that a three year research project into the effects of burning frequency and season of burning on the maintenance and expansion of *R. leptorrhynchoides* populations be undertaken by either CSIRO and/or universities (Briggs *et al.* 1998).

Environment ACT (Wildlife Research and Monitoring (WR&M)) will liaise with Commonwealth, NSW and Victorian members of the National Recovery Team to coordinate protection and management activities.

## MONITORING

Intermittent and *ad hoc* monitoring of some sites has shown a decline in a few populations and increases in others. Systematic monitoring of all populations in the ACT region is required to assess the effects of management actions in stabilising or increasing populations and to measure effectiveness of research-based management actions.

- **Seedling Establishment** - Monitoring is required to show whether the relative paucity of seedlings in areas of denser vegetation leads to a long-term decline in the number of adult plants present. This should be undertaken in conjunction with monitoring of small experimental burning/slashing plots in some of the larger populations. The results of any accidental burning should also be monitored.
- **Site inspection for damage** - Sites should be inspected quarterly, or as appropriate, for deliberate or accidental damage. This includes unauthorised grazing, mowing, burning or planting;

access by cars, trail bikes or other motor vehicles; trampling; rock, soil, wood or plant removal; and dumping of rubbish. Fences/barriers and signs should be installed or upgraded where necessary.

- **Research and Monitoring Coordination** - Environment ACT will cooperate with other researchers to ensure that research and monitoring on *R. leptorrhynchoides* is coordinated and made available to the National Recovery Team.

## MANAGEMENT

Management will aim to protect *R. leptorrhynchoides* and its habitat, and promote its regeneration. It will maintain species diversity, and take account of the needs of other sensitive species present, and of the whole community. Vehicle access, trampling and soil disturbance will be kept to a minimum.

An appropriate management regime will be developed for each site, in the form of a Management Plan or be agreed to under the terms of a Memorandum of Understanding.

Environment ACT will take an adaptive management approach, liaising with the National Recovery Team, CSIRO Centre for Plant Biodiversity Research and other regional researchers, and incorporating the results of research into management prescriptions for ACT *R. leptorrhynchoides* sites.

Specific management issues relating to conservation of the species are:

- **Woody weed control** - This is most important on the woodland sites. Older woody weeds should be cut and removed, and the stumps dabbed with herbicide. Seedlings and suckers should be controlled annually by hand-pulling and spot-spraying with herbicide (no spot spraying of herbicide should be used within 2 metres of any *R. leptorrhynchoides* plant).
- **Regeneration of native trees and shrubs** - Non-indigenous native trees (eg. *Acacia baileyana*, *A. cultriformis*) and shrubs should be treated as woody weeds. In the absence of fire, slashing or grazing, regeneration of eucalypts and some native shrubs such as *Cassinia quinquefaria*, Bitter Pea (*Daviesia mimosoides*), *Silver Wattle (Acacia dealbata)* and *Green Wattle (A. mearnsii)* may shade out *R. leptorrhynchoides*. Where necessary, a selection of these should be removed (cut and dabbed) annually, to maintain an open mixed-age/species woodland.
- **Herbaceous weed control** - Priority should be given to weeds which can be invasive in native grassland/woodland, such as St John's Wort (*Hypericum perforatum*) and African Lovegrass (*Eragrostis curvula*). Control methods should take account of the characteristics of each site, and proximity to *R. leptorrhynchoides* plants.
- **Understorey competition** - Where monitoring shows a continuing lack of seedling establishment around adult plants in dense understorey vegetation, and/or deterioration in the quality of the community, intervention may be necessary. Grazing is not recommended as a routine management method, as it can have an adverse effect on *R. leptorrhynchoides* and its habitat. Occasional slashing in late summer may be used on sites where other factors (eg. fire risk to property) make burning undesirable. Patch burning may be appropriate on other sites but its effects should be monitored. Burning should not be used as a broad-scale management tool on *R. leptorrhynchoides* sites in the ACT until it has been established by experimentation that the benefits (seedling establishment) are likely to outweigh the costs (mortality of adult plants).
- **Ex situ conservation of the species** - This will be encouraged, with expert advice being obtained in this regard. Long term storage of seed may not be feasible if *R. leptorrhynchoides* follows the pattern of many other species of Asteraceae, with short seed life.

Environment ACT (WR&M) will explore possibilities for horticultural effort being applied as a conservation measure for *R. leptorrhynchoides*.

- **Documentation of plantings** - Control of plantings from nursery stock and other sources in areas near sites where the species naturally occurs needs to be undertaken to reduce or avoid any adverse effects of genetic mixing.

## EDUCATION AND LIAISON

As with any threatened species, the importance of informing the community and people responsible for managing their habitat is substantial.

Environment ACT, in consultation with the National Recovery Team, will compile and distribute management guidelines and maintain contact with land managers responsible for areas on which populations presently occur.

As recommended by the National Recovery Team, Environment ACT will prepare and distribute to appropriate target audiences information about *R. leptorrhynchoides* and its conservation - this will include providing information to the public on the conservation, management and research actions being undertaken, so that measures being implemented are understood and supported.

Environment ACT will also promote conservation of the species through provision of suitable information signs at key sites.

The Queanbeyan City Council has adopted *R. leptorrhynchoides* as its Parks and Recreation logo for display on items such as vehicles.

## Protection

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This Action Plan, together with the National Recovery Plan, are the main instruments by which continued survival of *R. leptorrhynchoides* and its habitat can be ensured.

Conservation effort will be focussed on protecting the existing ACT populations as a cluster of sites, since there are only a small number of viable populations remaining in NSW and Victoria. Special emphasis will be placed on protecting the two largest populations, being on Stirling Ridge Yarralumla and within the Majura Field Firing Range. The other sites are located at Red Hill, St Mark's Barton, Capital Hill, near Campbell Park Offices and near HMAS Harman, in the Jerrabomberra Valley.

On the Majura Field Firing Range, protection of this species can be achieved coincidentally with that of grasslands and other threatened species including the endangered Eastern Lined Earless Dragon (*Tympanocryptis lineata pinguicolla*) and Golden Sun Moth (*Synemon plana*), as well as the vulnerable Striped Legless Lizard (*Delma impar*).

Most of the known ACT populations of *R. leptorrhynchoides* occur on Commonwealth owned and managed land (National Land); with exceptions being the Red Hill site occurring on Territory Land - Nature Reserve and the Jerrabomberra Valley site near HMAS Harman, which is unleased Territory Land, both being managed by Environment ACT (ACT Parks and Conservation Service (ACTPCS)). A further exception is the St Mark's Barton site, which occurs on a perpetual lease held by the Anglican Church. Two locations with *R. leptorrhynchoides* currently have reserve status: Red Hill (part Canberra Nature Park (CNP)) and the Queanbeyan Nature Reserve (NSW). However, there is no formal protection for any part of the other known disjunct populations. Consideration therefore needs to be given to protection of these sites, especially those at Stirling Ridge and at the Majura Field Firing Range.

### **Protection of *R. leptorrhynchoides* Populations**

Protection of *R. leptorrhynchoides* in native grassland habitat will be achieved through the provisions of the *Land (Planning and Environment) Act 1991*, the Territory Plan and Memoranda of Understanding with the Commonwealth and the Anglican Church.

#### **(I) Territory Plan - Hills, Ridges and Buffers with Public Land Overlay of Type Nature Reserve**

Reservation is generally recognised as the mechanism for ensuring that sites of high conservation value are not eventually converted to a land use incompatible with their natural values (Caughley and Gunn 1996). Reservation is therefore an important mechanism for the protection of *R. leptorrhynchoides* and its habitat. Reservation does not exclude the option of managing controlled grazing to achieve conservation objectives through agistment arrangements with rural lessees. One small area of grassy woodland containing populations of *R. leptorrhynchoides* is currently reserved as part of Canberra Nature Park (CNP) (Table 2).

Although the Campbell Park area contains a relatively small population of *R. leptorrhynchoides*, its overall conservation value is significant for other species, given that it is natural temperate grassland habitat supporting the endangered Eastern Lined Earless Dragon (*Tympanocryptis lineata pinguicolla*), Golden

Sun Moth (*Synemon plana*) and the Perunga Grasshopper (*Perunga ochracea*). This area will be considered for reservation as part of a future review of planning for the Majura Valley (Table 2 below).

**Table 2. Hills, Ridges and Buffers:  
Public Land - Nature Reserve.**

Location and site	Pop'n size	GAP No.	Area (ha)	Current Status
Red Hill: East	3,500	N/A	0.3	Reserve
Red Hill: North	1,300	N/A	0.5	Reserve

Reservation to be considered as part of further evaluation of planning and conservation issues  
Campbell Park: Offices

Note: GAP No. = Grassland Action Plan Number. This number is used as a site reference in the Natural Temperate Grassland Action Plan. A full explanation is given as a footnote below

Table 1. N/A = Not applicable.

The shaded area indicates sites that are Public Land - Nature Reserve.

**(ii) Memoranda of Understanding**

Memoranda of Understanding (MOU) provide another means of ensuring that sites with high conservation value will be managed so as to maintain their conservation value in perpetuity while enabling other compatible land uses, as identified in the MOU, to occur. An MOU with the Commonwealth does not preclude the possibility of the land being reserved in the future under Commonwealth legislation. MOUs are appropriate for Commonwealth owned or occupied land, or other land where long-term land uses will not compromise conservation values (for example, land used for Defence purposes). Areas of National Land supporting *R. leptorrhynchoides*, for which an MOU will be negotiated, are listed in Table 3.

**Table 3. Memorandum of Understanding to achieve protection equivalent to reservation.**

Location and site	Pop'n size	GAP No.	Area (ha)	Current Status
Stirling Ridge	70,000	N/A	25.0 <	National Land
Majura Valley: Field Firing Range (parts)	30,000	28	3.75	National Land
Capital Hill: West Block	5	N/A	0.01	National Land
Capital Hill: Between State & Capital Circle	220	N/A	1.0	National Land
St Mark's, Barton	130	33	1.8	Perpetual Lease

N/A = Not applicable < = Area is approximate only.

Once MOU's have been agreed, populations of *R. leptorrhynchoides* will be protected in native habitat across the species' distribution in the ACT.

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#### **Other Areas Supporting *R. leptorrhynchoides***

Public Land categories of the Territory Plan (other than Nature Reserves) include Urban Open Space and Special Purpose Reserves. Activities permitted in these land use categories can be compatible with conservation values, provided that appropriate conservation management is in place. In these cases, maintenance of the conservation values of the site is the responsibility of the relevant ACT Government agency. Other similar land uses include road reserves and powerline easements.

The site near HMAS Harman in the Jerrabomberra Valley (Jerrabomberra East - Site D, Tharwa Road) is a road verge being managed by Environment ACT (ACTPCS) (Table 4 below). It will be appropriately managed as Public Land (Urban Open Space) to retain its conservation value.

**Table 4. Public Land - Urban Open Space.**

Location and site	Pop'n size	GAP No.	Area (ha)	Current Status
Jerrabomberra Valley (East): (Tharwa Road).	50	37	2.0	Unleased Territory Land

#### **Other Actions for Protection**

Additional actions that will be implemented to protect known sites where *R. leptorrhynchoides* occurs are:

Complementary protection through reservation in NSW will be promoted through the National Recovery Team.

Any conservation area established primarily for *R. leptorrhynchoides* will be managed as a component of the grassy community.

#### **Further Supporting Mechanisms**

This Action Plan, together with the National Recovery Plan, the Canberra Nature Park Management Plan and the Action Plans for Natural Temperate Grassland and Yellow Box/Red Gum Grassy Woodland, complement conservation management guidelines for this species and its habitat.

Environment ACT will work with the Planning and Land Management group of the Department of Urban Services and the National Capital Authority to ensure that land uses adjacent to sites supporting *R. leptorrhynchoides* are compatible with conservation objectives and to minimise any adverse impacts.

The Stirling Ridge and Red Hill sites have been listed on the Register of the National Estate, on the basis that they comprise major known remaining ecologically viable areas of *R. leptorrhynchoides*.

#### **Socio-economic Issues**

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The main social benefits of conserving representative communities of natural temperate grassland or grassy woodland in which *R. leptorrhynchoides* occurs are:

- meeting community concerns that further loss or extinction of significant ecological communities, together with their component native species, be prevented; and
- the amenity and recreational values associated with the grasslands and woodlands reserves, in which the species occurs.

The potential for economic utilisation of native grassland habitat sites is relevant for those sites where current management or land uses are deemed to be compatible with the retention of conservation values. There are four main aspects of planning in Canberra that will be affected by the implementation of this Action Plan. These are:

##### 1. Transport Facilities

The provision and/or upgrading of the following transport facilities may be affected:

- Majura Parkway - southern section and connections
- Very High Speed Train corridor (Majura and Jerrabomberra valleys).

## 2. Industrial Areas

The planning for future industrial areas, in particular, a possible industrial complex associated with the Airport in the Majura Valley.

## 3. National Uses

The Stirling Ridge area of National Land has been set aside for "National Use" under the *National Capital Plan*. This reservation relates to the consideration of the area by the Official Establishments Trust as a future site for the Prime Minister's residence.

## Legislative Provisions

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The following legislation is relevant to conservation of flora and fauna in the ACT:

### ***Nature Conservation Act 1980***

The Nature Conservation Act provides a mechanism to encourage the protection of native plants and animals, the identification of threatened species and ecological communities, and the management of Public Land reserved for nature conservation purposes. Specified activities are managed via a licensing system.

Native plants and animals may be declared in recognition of a particular conservation concern and increased controls and penalties apply. Species declared as endangered must also be declared as having special protection status, the highest level of statutory protection that can be conferred.

As an endangered species, *R. leptorrhynchoides* must be declared a special protection status (SPS) species and any activity affecting an SPS species is subject to special scrutiny. Conservation requirements are a paramount consideration and only activities related to conservation of the species or serving a special purpose are permissible. The Conservator of Flora and Fauna may only grant a licence for activities affecting a species with SPS where satisfied that the act specified in the licence meets a range of stringent conditions. Further information can be obtained from the Licensing Officer, Compliance and Quarantine Services, Environment ACT, telephone 6207 6376.

### ***Land (Planning and Environment) Act 1991***

The Land (Planning and Environment) Act is the primary authority for land planning and administration. It establishes the Territory Plan, which identifies nature reserves, national parks and wilderness areas within the Public Land estate.

The Land (Planning and Environment) Act establishes the Heritage Places Register. Places of natural heritage significance may be identified and conservation requirements specified.

Environmental Assessments and Inquiries may be initiated in relation to land use and development proposals.

### ***Endangered Species Protection Act 1992 (C'th)***

Under this legislation, *R. leptorrhynchoides* has been declared an **endangered** species. The Commonwealth is required to prepare and implement recovery plans for the species as it occurs in Commonwealth areas, and to cooperate with both the ACT and NSW authorities in implementing protection measures. The Commonwealth also encourages joint preparation and implementation of a recovery plan across State and Territory boundaries (ANCA 1994). This is being achieved through joint membership on the National Recovery Team, which has already prepared a draft national recovery plan for the species.

### ***Australian Heritage Commission Act 1975 (C'th)***

The Australian Heritage Commission Act establishes the Register of the National Estate (RNE) and imposes a special duty of care on Commonwealth agencies in relation to actions that have an adverse

effect on any part of a place entered in the Register. Currently there are two sites listed in the RNE in recognition of their habitat value for *R. leptorrhynchoides*.

## Consultation and Community Participation

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Environment ACT (WR&M) actively participates on the National Recovery Team, which has representatives from NSW NPWS, the Centre for Plant Biodiversity Research (CSIRO), Environment Australia, the National Capital Authority, Department of Defence, NSW Department of Housing, Queanbeyan City Council, Yarrowlunla Shire Council, Goulburn Rural Lands Protection Board, the Monaro Conservation Society, the Society for Growing Australian Plants and the Victorian Department of Natural Resources and Environment.

Representatives of Environment ACT (WR&M) maintain regular contact with the managers of the Majura Field Firing Range, officers of the National Capital Authority and lessees of the St Mark's, Barton site to raise awareness of issues associated with the protection of *R. leptorrhynchoides*. There are also links with the management team for the Joint Regional Biodiversity Survey of Grassy Ecosystems Project.

Environment ACT will encourage community groups including the Friends of Grasslands and appropriate Park Care Groups to assist in the conservation of native grasslands and their component species including *R. leptorrhynchoides*.

Environment ACT will conduct community education programs which will include general community awareness of grassland conservation issues, including those associated with endangered species.

Environment ACT will promote the conservation of *R. leptorrhynchoides* through suitable information signs, community liaison and public education.

## Implementation, Evaluation and Review

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### RESPONSIBILITY FOR IMPLEMENTATION

Environment ACT will have responsibility for coordination of the implementation of this Action Plan, subject to the availability of Government resources. Primary responsibility for conservation and management of grassy communities supporting *R. leptorrhynchoides* on Territory Land will rest with the ACTPCS whilst relevant Commonwealth agencies will have responsibility for National Land, although provisions in the *Nature Conservation Act 1980* (ACT) are still applicable.

The ACT Government will seek the cooperation of the Commonwealth Government in setting in place coordinated and complementary action to protect the species' grassy habitat on Commonwealth land in the ACT.

The National Recovery Team will also be advising on, or encouraging the implementation of management measures to safeguard the species' conservation. Individual management authorities will be responsible for the on-ground implementation.

### EVALUATION

Implementation of this Action Plan will be a collaborative exercise between government agencies, landholders and the community generally. Commonwealth and NSW participation will be critical in some cases. The Action Plan will be reviewed after three years. The review will comprise an assessment of progress using the following performance indicators:

- completion of commitments that can reasonably be expected to be finalised within the review timeframe (e.g. introduction of a statutory protection measure for a species; development of a management plan);
- completion of a stage in a process with a time line that exceeds the review period (e.g. design or commencement of a research program);

- commencement of a particular commitment that is of a continuing nature (e.g. design or commencement of a monitoring program for population abundance); and
- expert assessment of achievement of conservation objectives of the Action Plan.

The review will be reported to the ACT Flora and Fauna Committee. This will provide an opportunity for Environment ACT and the Flora and Fauna Committee to assess progress, take account of developments in nature conservation knowledge, policy and administration and review directions and priorities for future conservation action.

The following conservation actions will be given priority attention:

completion of surveys in native grassland and woodland sites yet to be fully assessed, where the species may possibly occur;

establishment of a monitoring program to provide information on how populations respond to management practices and environmental pressures, especially those relating to genetic aspects and the effects of fire;

assessment of *ex-situ* conservation measures;

putting in place protection measures;

establishing liaison mechanisms with NSW authorities and ensuring that complementary protection measures have been put in place for NSW populations, and

maintaining stability of or generating an increase in ACT populations of *R. leptorrhynchoides* over the three year period.

## Acknowledgements

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This Action Plan draws on expert advice provided by Alison Rowell, Biologist and Environmental Consultant, and from research work undertaken by Dr Andrew Young, Centre for Plant Biodiversity Research (CSIRO).

The illustration of the species (Figure 1) was prepared for Environment ACT by John Pratt.

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### List of Action Plans - December 1997

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In accordance with Section 23 of the *Nature Conservation Act 1980*, the following Action Plans have been prepared by the Conservator of Flora and Fauna:

No. 1: Natural Temperate Grassland - an endangered ecological community.

No. 2: Striped Legless Lizard (*Delma impar*) - a vulnerable species.

No. 3: Eastern Lined Earless Dragon (*Tympanocryptis lineata pinguicolla*) - an endangered species.

No. 4: A leek orchid (*Prasophyllum petilum*) - an endangered species.

No. 5: A subalpine herb (*Gentiana baeuerlenii*) - an endangered species.

No. 6: Corroboree Frog (*Pseudophryne corroboree*) - a vulnerable species.

No. 7: Golden Sun Moth (*Synemon plana*) - an endangered species.

No. 8: Button Wrinklewort (*Rutidosia leptorrhynchoides*)  
- an endangered species.

No. 9: Small Purple Pea (*Swainsona recta*) - an endangered species.

### FURTHER INFORMATION

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Further information on this Action Plan or other threatened species and ecological communities can be obtained from:

Environment ACT  
(Wildlife Research and Monitoring)  
Phone: (02) 6207 2126  
Fax: (02) 6207 2122

This document should be cited as:

ACT Government, 1998. *Button Wrinklewort* (*Rutidosia leptorrhynchoides*): *An endangered species*.  
Action Plan No. 8. Environment ACT, Canberra.