

Flora & Fauna Guarantee Action Statement

#39

This Action Statement was first published in 1992 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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Department of
Sustainability and
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Published by the
Department
of Sustainability and
Environment, Victoria.
8 Nicholson Street,
East Melbourne,
Victoria 3002 Australia

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ISSN 1448-9902

Eltham Copper Butterfly *Paralucia pyrodiscus lucida*



Eltham Copper Butterfly
(*Paralucia pyrodiscus lucida*)



Distribution in Victoria (DSE 2002)

Description and Distribution

The Eltham Copper Butterfly (*Paralucia pyrodiscus lucida* Crosby) (Lepidoptera: Lycaenidae) was described as a clearly defined sub-species of the Dull Copper (*P. pyrodiscus* Rosenstock), by Crosby (1951). The Eltham Copper was distinguished from the typical subspecies (*P. p. pyrodiscus*) by the sharply defined, distinctively shaped patch of bright copper scales on the male hind wing which is constant from specimen to specimen; *P. p. pyrodiscus* has only an ill-defined central copper area often reduced to a mere suffusion of copper scales, and varying from specimen to specimen (Crosby 1951).

The adult male is dark brown above, with both forewing and hindwing having a shining orange-yellow (copper) area. In the hindwing, the orange-yellow area is triangular and occurs in the tornal (outer) half of the wing. The underside is pale brown, with pale brown spots and bands edged dark brown. The hindwing has a pair of obscure brown subtornal spots. The adult female is dark brown above. The

central area of the forewing is bright orange-yellow (copper); the hindwing has a variable orange-yellow central area, occasionally reaching almost to the base and sometimes reaching the termen (outer margin of the wing), with prominent subterminal dark brown spots. The underside is similar to the male (Common & Waterhouse, 1981).

The life cycle of the butterfly includes an intimate and obligatory association with ants of the genus *Notoncus* and a dwarfed form of the shrub *Bursaria spinosa* (Sweet Bursaria). The butterflies have not been found in areas where *Notoncus* ant colonies do not occur (Vaughan 1988a). Adults lay their eggs on the roots of *Bursaria spinosa*. Once the eggs hatch, the caterpillars are guarded by the ants, which lead them to and from the ant colony to browse on the Sweet Bursaria leaves. In return, the ants feed on sugar secretions which are exuded from the caterpillars' bodies. For detailed description refer to Crosby (1987) and Vaughan (1988a). The butterfly is known from 10 locations in the Eltham-Greensborough area near Melbourne, one at Castlemaine in central

Victoria, and, in the Wimmera, from five discrete populations at Kiata and one at Salisbury (Vaughan 1988a). The following vegetation descriptions of the habitats is taken from Vaughan (1988a).

In the Eltham area of its range, the Eltham Copper Butterfly appears to require a well-drained gentle slope, with a north to west aspect. Its known habitat is sparse dry woodland consisting mainly of Red Stringybark (*Eucalyptus macrorrhyncha*), Red Box (*E. polyanthemos*), Long-leaved Box (*E. goniocalyx*) and Late Black Wattle (*Acacia mearnsii*).

The understorey comprises mainly Cherry Ballart (*Exocarpus cupressiformis*), Hedge Wattle (*Acacia paradoxa*), Drooping Cassinia (*Cassinia arcuata*), Shiny Cassinia (*Cassinia longifolia*) and Sweet Bursaria with a ground cover including Small-leaf Clematis (*Clematis microphylla*), Purple Coral-pea (*Hardenbergia violacea*), and Common Flat-pea (*Platylobium obtusangulum*) amongst native grasses, mosses and leaf litter.

The Kiata populations occur in open woodland of Buloke (*Allocasuarina luehmannii*), Slender Cypress Pine (*Callitris preissii*) and Black Box (*Eucalyptus largiflorens*) with an understorey including Flame Heath (*Astroloma conostephioides*), Grey Mulga (*Acacia brachybotrya*), Golden Wattle (*Acacia pycnantha*) and Desert Hakea (*Hakea muellerana*) with discrete patches of Sweet Bursaria in close association with the Buloke. The ground layer consists largely of matt rushes (*Lomandra* spp.) amongst native grasses, mosses and pigface.

There is a small population on a Crown Reserve at Salisbury in a woodland of predominantly Yellow Box (*Eucalyptus leucoxylon*), Black Box, Buloke and Slender Cypress Pine with scattered Sweet Bursaria (D.Venn pers. comm.). Past stock grazing has reduced ground cover species and the Sweet Bursaria has been heavily browsed. The population at Castlemaine is in open woodland of Red Stringybark, Red Box, Grey Box (*Eucalyptus microcarpa*), and Blakely's Red Gum (*E. blakelyi*) on a north to north-east slope, with an understorey dominated by Clustered Everlasting (*Helichrysum semmipapposum*) and Common Everlasting (*H. apiculatum*) with a small occurrence of Sweet Bursaria.

Conservation Status

Current Status

DCE (1991) Vulnerable

In addition, Vaughan (1988b) lists the subspecies as being of 'particular conservation concern'.

The Eltham Copper Butterfly has been listed as a threatened taxon in Schedule 2 of the *Flora and Fauna Guarantee Act 1988*.

Reasons for Conservation Status

The major cause of butterfly decline has been loss of habitat because of agricultural expansion and urbanisation. The species has been eliminated over much of its former range, and the remaining colonies have been isolated so that genetic interchange between populations has become less probable. Inbreeding may lead ultimately to the expression

of harmful identical recessive genes and eventual population collapse (Vaughan 1988a).

Other factors which directly threaten the viability of known colonies include degradation of the habitat by adverse human impacts (such as trampling, slashing and clearing of vegetation), rubbish dumping, alteration to drainage regimes, and weed invasion and wildfires.

Habitat suitability appears to decline substantially if the woodland is disturbed. Since European settlement, much of the butterfly's required habitat, consisting of Sweet Bursaria in the presence of ants of the genus *Notoncus*, has been grossly altered (Vaughan 1987) and it is likely that there has been a corresponding decline in the range and abundance of the butterfly.

The site at Kiata, on land gazetted as a Flora and Fauna Reserve, has a viable population in the long term, barring natural disturbance such as bushfires (Vaughan 1988a).

The single site at Salisbury is in a conservation reserve but because of its small size the colony's future is uncertain.

Only three sites at Eltham—the Eastern and Western Diosma Road colonies and the Pauline Toner Butterfly Reserve (formerly known as the Eucalyptus Road colony)—have long-term viability, given permanent reservation and proper management (P. Vaughan, pers. comm.). However, the remaining sites in the area provide an important contribution to the overall population dynamics within the Eltham-Greensborough area. With proper conservation management these sites may also maintain viability in the longer term. Much is still to be determined about the current distribution and abundance of the species. However, an extensive state-wide survey of appropriate habitat did not find additional populations (Vaughan 1988a).

Crosby (1987) states that the very restricted current distribution indicates that the insect is 'threatened', as known colonies are likely to be subject to inappropriate management which could lead to habitat disturbance or destruction, and their small size will result in population collapse.

In its final recommendation, the Scientific Advisory Committee (SAC 1991) determined that the Eltham Copper Butterfly is:

- in a demonstrable state of decline which is likely to result in extinction;
- significantly prone to future threats which are likely to result in extinction;
- and very rare in terms of abundance and distribution.

Major Conservation Objective

The major conservation objective is to ensure the protection and conservation of existing known populations of Eltham Copper Butterflies. This will be achieved by:

- undertaking an update of the distribution and abundance of known sites. Those colonies considered most viable in the long term (at Eltham-Greensborough, Kiata and Castlemaine) should be given priority for management, restoration and protection;
- maintaining in the wild as many individual colonies as possible, in order to retain maximum genetic variation;

- focusing management action upon the maintenance of suitable natural habitat; and
- considering opportunities, where feasible, to establish additional populations at selected sites within the known range.

Management Issues

The management plan for the Eltham Copper Butterfly (Vaughan 1988a) outlines and discusses the major management issues.

Ecological Issues Specific to the Taxon

The distribution, abundance, biology, habitat requirements and habitat availability for the Eltham Copper Butterfly are yet to be adequately determined. While some matters of immediate concern are understood, (e.g. the approximate boundaries of known suburban colonies), there is insufficient information to generate long-term comprehensive plans for conservation of the species. There is not enough information to estimate minimum areas of habitat needed to maintain viable populations in the long-term. Secure but small areas of remnant habitat, while being important botanical sites, may be inadequate for conserving butterfly populations. If butterfly numbers become too low in an isolated area, inbreeding may cause the population to become less viable in the long term due to a lack of genetic diversity (Vaughan 1988a). Very small populations are more at risk from all threats or adverse disturbances.

The butterfly's behaviour indicates a strong attachment to a particular type of habitat. Dispersal is therefore localised and with the increasing isolation of habitat remnants, movement beyond these remnants is unlikely without the establishment of contiguous areas of appropriate habitat. As a consequence, it will be difficult for Eltham Copper Butterflies to colonise new areas or to exchange genetic material between disjunct populations.

Another major concern is the maintenance of conditions necessary for the continual presence of the dwarf form of Sweet Bursaria and the *Notoncus* species of ant on which the butterfly depends.

The habitat of the Eltham Copper Butterfly has been degraded or destroyed by development. The main causes of habitat removal and modification within its urban range are subdivision and the associated road works and building construction. Within its rural range, the butterfly is now generally restricted to remnant habitat on public land, as broadacre clearing for agriculture has removed most suitable habitat on private land.

Eltham Copper Butterfly populations may also be subject to other impacts. Increasing urbanisation brings additional human pressures such as disturbance by trampling, weed invasion and unplanned fires leading to habitat degradation. Butterfly numbers may be further reduced by illegal specimen collecting.

The largest known populations are close to Melbourne, and these remain threatened by the activities mentioned above. Populations at Kiata are more secure, while that at Castlemaine is uncertain. Approximately 105 ha of known

butterfly habitat is protected within conservation reserves: Kiata area, approximately 90 ha; Salisbury, 12 ha; Eltham, 3 ha. The Castlemaine site occupies 3 ha of remnant bushland within the Castlemaine Botanic Gardens. Within all areas the distribution of the butterfly is patchy.

The larger areas generally provide conditions for more secure populations, whilst the smaller urban areas are likely to be isolated by residential development. In isolation, these areas may not be large enough to support viable populations of the Eltham Copper Butterfly.

Wider Conservation Issues

Conservation of the Eltham Copper Butterfly requires that suitable native habitat, including a dwarfed form of Sweet Bursaria, is retained. Protection of this habitat will be beneficial for other indigenous species that coexist at these sites, including the ants.

There has been ongoing active management of the two colonies in Diosma Road, and at the sites in Eucalyptus Road and Lower Eltham Park. While problems altered runoff and human incursion have been addressed, there are other problems, including weed infestation, particularly the aggressive invasion by the introduced Cape Broom (or Montpellier Broom) (*Genista monspessulana*), Radiata Pine (*Pinus radiata*) and introduced grasses (notably Large Quaking-grass. European Wasps (*Vespula germanica*) have also been found at the site and represent an unknown threat. Other sites on private land are being investigated, and measures to coordinate and promote habitat conservation are under consideration.

Rabbits (*Oryctolagus cuniculus*) are the main problem at Kiata and Salisbury, and control is now a priority for the Horsham Region of the Department. Brown Hares (*Lepus capensis*) also cause a problem as they are known to eat the Bursaria.

The Castlemaine colony is threatened with weed invasion, predominantly Cape Broom, Blackberry (*Rubus fruticosus*) and pine wildings (wild pines establishing in the bush). Rabbits are also an ongoing problem. Other management issues that need to be addressed include habitat damage from motorbike riding and public access, as well as illegal timber removal and rubbish dumping at the site.

Social and Economic Issues

It is very important for the protection of this species that several socio-economic issues associated with human activity on the urban fringe be addressed. The need to constrain disturbance and human interference has some implications, in most cases minor, for residents and users at each site. There are no significant social and economic matters associated with the rural sites.

Because of the proximity of people, vehicles and companion animals, the urban fringe sites involve several intractable problems. Consequently, the long-term survival of the species is only likely with the active support and involvement of residents and local authorities.

A socio-economic assessment by Grace (1988) discusses the costs, benefits and social values of preserving the key habitat areas of the Eltham Copper Butterfly in the Eltham area. The assessment concluded that residential land values were likely to increase due to proximity to the butterfly Reserves, and that

ongoing maintenance cost would be relatively low. Intangible benefits from the conservation of the butterfly were identified, and are considered to be high. The social benefits of conserving the Eltham Copper Butterfly, whilst being difficult to quantify and evaluate economically, include aesthetic quality, community involvement and co-operation, educational opportunities, cultural enrichment, and passive recreation. The recognition of the community's desire to protect these values by conserving the butterfly is reflected in public appeals and fundraising activities administered by the Victorian Conservation Trust (VCT) from 1987 to 1989. The appeal generated widespread public support and interest, resulting in the purchase of the Western Colony land in Diosma Road which otherwise was to be developed and the colony certainly destroyed. The former Department of Conservation and Environment (DCE) provided \$300,000, the Shire of Eltham \$125,000, and the public appeal \$59,000 towards the acquisition of land containing butterfly habitat. Other benefits that may accrue from conservation of the butterfly. Retaining suitable habitat will assist the conservation of other species and may create recreational and tourism opportunities. Furthermore, the butterfly offers a consistent subject for school projects and is of considerable value as a local example of ecology, symbiosis, mutualism and of the rationale and practice of conservation.

However, as areas of land have been set aside and managed for habitat conservation, other land uses such as urban development and some kinds of recreation have been displaced. This has involved social and economic costs at a local level. If further acquisition is warranted then similar impacts will be incurred.

Coordinated planning and management agreements with landholders may enable the conservation goal to be obtained with minimal expenditure and social cost.

Management Action

Previous Management Action

Habitat Inventory

Crosby (1987) made an inventory of butterfly habitat for the Melbourne environs. Vaughan (1988a) updated Crosby's work and extended the survey to a state-wide perspective resulting in a more comprehensive report. Vaughan's inventory includes not only sites occupied by the butterfly, but also sites unsuccessfully searched and others warranting further search effort.

Habitat Conservation

- The Kiata Flora and Fauna Reserve was established and proclaimed under the *Crown Land (Reserves) Act 1978*.
- Additional areas of adjoining Crown Land including a Quarry Reserve, Public Park and a number of unused roads are to be re-reserved and incorporated within the Kiata Flora and Fauna Reserve.

- The Salisbury Bushland Reserve was permanently reserved in 1992 for the conservation of an area for natural interest under the *Crown Land (Reserves) Act 1978*.
- The Pauline Toner Butterfly Reserve (Eucalyptus Road colony-formerly Education Department land) has been transferred to CNR for management and permanently reserved for the preservation of habitat for native fauna under the *Crown Land (Reserves) Act 1978*.
- The Diosma Road Western Colony was purchased jointly by VCT and the Shire of Eltham as a result of a public appeal as well as other community endeavours, and CNR has accepted management responsibility. The Eastern Colony was included in a Public Open Space Reservation within the planned subdivision. These sites are being managed by CNR in conjunction with the Shire of Eltham.
- CNR has initiated negotiations with the administrators of the Castlemaine Botanic Gardens to have the Eltham Copper Butterfly area recognised and protected as a conservation area.

Habitat Management

Implementation of the management plan has included:

- Liaison and consultation with developers and owners of land abutting the Diosma Road sites to prevent habitat degradation and to promote the natural values of the area. CNR, in conjunction with the VCT, Shire of Eltham and the Friends of Eltham Copper Butterfly, has developed an education program to inform new and prospective owners of the importance of the butterfly colonies and aspects of conservation management.
- Completion of fencing at the Diosma Road sites and Eucalyptus Road and erecting signs at the Pauline Toner Butterfly Reserve and Diosma Road Western Colony.
- Removing car bodies and rubbish from the Diosma Road sites at Eltham.
- Weed control (predominantly Cape Broom and Blackberry) and other land protection measures, including drainage mitigation works have been undertaken at the Diosma Road and Eucalyptus Road sites by CNR and community conservation groups.
- Assignment of a Park Ranger from Warrandyte State Park part-time to patrol and manage the Diosma Road and Eucalyptus Road sites and to assist the Friends group.
- Management of areas of butterfly habitat under other arrangements, including Hohne's Hill (part of the Lower Eltham Park Management Plan) which is being managed by the Shire of Eltham, in accordance with the Eltham Copper Butterfly Management Plan. The Friends of Diamond Creek and the Children for Conservation have been active in these restoration programs. Similarly, a number of landholders who have the butterfly on their land have taken positive actions to preserve remnant habitat.

- Release by the Shire of Eltham of a Draft Conservation and Heritage Strategy, which has been adopted in principle by the Shire Council (Shire of Eltham 1991a). The draft recognises the significance of the Eltham Copper Butterfly and contains numerous recommendations consistent with the conservation of the species and its habitat. An accompanying document, *Conservation and Heritage Strategy Resource Document* (Shire of Eltham 1991b), also makes reference to the importance of the butterfly.
- Commencement of work on a management plan for an area including Lower Eltham Park and Hohne's Hill butterfly colony by Environmental Science students from the Rusden Campus of Deakin University for the Shire of Eltham. The students have been provided with a copy of the management plan (Vaughan 1988a) for the butterfly, and have been briefed to include this in their strategy for the whole area.
- Fencing work by the Shire of Diamond Valley at the butterfly habitat in Yandell Reserve to protect the site from trampling.
- Management at Kiata, including Rabbit and weed control, the construction of exclusion plots (specifically to protect the rare orchid *Thelymitra epipactoides*, but also benefitting the butterfly habitat) and regular patrols by CNR Rangers to minimise visitor pressure.
- Negotiation by Horsham Region of a voluntary agreement with aerial spraying contractors to limit aerial spraying near the Kiata Flora and Fauna Reserve to avoid possible spray drift damage.
- Removing grazing from the Salisbury site as of 1 October 1989. The area is well fenced but recovery has been slow with little increase in species diversity to date. The Sweet Bursaria has benefited from the removal of grazing.
- A community group (Castlemaine Field Naturalists) has begun a weed control program at the Castlemaine site. Efforts have concentrated on reducing the Cape Broom infestation.

Biological Research

Initial investigations into butterfly biology and habitat requirements have been undertaken with surveys and studies documented by Crosby (1987) and Vaughan (1988a).

Population Surveys

Field surveys by Crosby (1987) and Vaughan (1988a) to assess the presence or absence of the butterfly have identified existing and potential sites for further assessment.

Population Counts

- Counts of butterflies at Eltham are routinely undertaken by the Friends group. While these counts do not provide accurate scientific data, they

may provide an indication of butterfly activity throughout the season and give management a broad idea of relative population abundance and variation.

- Populations at Kiata have been inspected annually for many years by an interested local naturalist.

Collecting from the Wild

The taking of the Eltham Copper Butterfly without a licence or permit is prohibited under the *Wildlife Act 1975*, as the taxon is listed under Schedule 2 of the *Flora and Fauna Guarantee Act 1988*. Current policy is not to grant licences or permits for taking threatened species from the wild.

Friends of Eltham Copper Butterfly

The Friends group was formed in 1989 and meets regularly to undertake voluntary management tasks to improve and preserve habitat in the reserves. Most work is concentrated on the Eucalyptus Road site and at the Eastern and Western colonies along Diosma Road.

Intended Management Action

Implementing the management plan for the Eltham Copper Butterfly (Vaughan 1988a) is an ongoing process and forms a key part of the intended actions. In addition to the actions required to implement the management plan, the following actions will also be undertaken.

State-wide Coordinating Group

Establish a small and effective working group to coordinate state-wide action and recommend priorities for conservation management of the butterfly. Such a group could consist of representatives from CNR, Local Government, Museum of Victoria, entomologists, Melbourne Zoo, and others as appropriate.

Inventory of Distribution and Abundance

Refine techniques for larval monitoring surveys of Eltham Copper Butterfly populations at known sites as recommended by Vaughan (1988a).

Habitat Conservation

- CNR Bendigo Region and the 'Kalimna Park' Committee of Management at Castlemaine will continue a project to ascertain the suitability of establishing an additional butterfly colony on this relatively large Crown Land Reserve (approx. 130 ha). The site has remnant habitat, including the dwarf form of Sweet Bursaria, and is about 2 km from the existing Castlemaine colony. Vaughan (1988a, page 50) regards this as a potential butterfly site. The project includes:
 - conducting a survey by entomologists for current existence of the butterfly/larvae/ants;
 - investigating the availability of butterflies for release into this site;
 - improving native vegetation;
 - controlling weeds; and
 - planting out or directly seeding additional Sweet Bursaria food plants.

- Prepare a critical habitat determination for the Eltham Copper Butterfly.
- Initiate investigations with the VCT and Shire of Eltham regarding the transfer of the Diosma Road Western Colony to the Crown for permanent reservation for conservation purposes under the *Crown Land (Reserves) Act 1978*.

Habitat Management

- Encourage the Shires of Eltham and Diamond Valley to implement appropriate management of sites under their control as outlined in the management plan.
- Encourage and assist landowners having Eltham Copper Butterfly colonies on their land, or controlling suitable or potentially suitable habitat in close proximity to existing colonies, to apply for registration under the CNR Land for Wildlife scheme. Managers in control of suitable community-owned land should be similarly encouraged and assisted.
- Develop regulations for the Kiata Flora and Fauna Reserve that reflect its conservation significance.
- Revegetate sections of the Kiata Flora and Fauna Reserve as per Horsham Region's works program.
- Implement Rabbit, Brown Hare and weed control programs at Kiata and Salisbury and continue CNR ranger activities within the Reserves.
- Continue the Cape Broom control program at Castlemaine, with community assistance. Additional effort to control blackberries and pine wildings within the site will also be undertaken.

Interpretation and Community Awareness

- Establish facilities and displays on the biology of the species to promote the interesting and appealing features of the Eltham Copper Butterfly as a means of developing support for its conservation.
- Encourage landholder participation by way of Landcare and Land for Wildlife programs, other incentive projects, Conservation Covenants and Agreements under Section 173 of the *Planning and Environment Act 1987*. In particular, the Land for Wildlife scheme should be used as a key means of regular contact with and amongst landholders who are committed to providing habitat for the Eltham Copper Butterfly. Used in this way, Land for Wildlife should be viewed as a medium for promoting and publicising the socio-economic, environmental, aesthetic and educational benefits of conserving this endangered and fascinating invertebrate.
- Prepare conservation notes and other technical information and advice on the Eltham Copper Butterfly. Ensure the material is widely and freely available to members of the Eltham-Greensborough community and in the wider rural areas where the butterfly occurs.

- Seek assistance and support from the Friends of Flora and Fauna Association, the Friends of the Diamond Creek and other conservation/community groups to support the Friends of Eltham Copper Butterfly.

Other Desirable Management Actions

Biological Research

- Conduct biological studies to provide information on genetics, reproduction, population dynamics and habitat requirements of the Eltham Copper Butterfly, as stated in the management plan.
- Pursue formally with tertiary institutions the possibility of making the butterfly and its conservation a topic for a postgraduate thesis.

Habitat Inventory

- Undertake surveys of potential sites and where recent confirmed records indicate the presence of the Eltham Copper Butterfly in accordance with Appendix V of the management plan (Vaughan 1988a).
- Monitor regeneration at the Salisbury site and compare this with any changes in the local Eltham Copper Butterfly population.

Population Inventory

- Undertake population inventories at any additional sites identified in the previous action.

Habitat Conservation

- Manage any newly identified habitat areas appropriately through cooperation between CNR and the landholder, consistent with the management plan.
- Investigate the value of possible social and economic studies in ensuring conservation and reclamation of habitat, especially in the urban fringe.

Habitat Management

- Undertake experimental burning trials to determine the effects on a butterfly colony and its habitat. Such trials should occur on sites that are to be lost to development.
- Give consideration to the timing of control burns, which would probably be preferable during the flight season (summer) when the butterflies can evade the fire.
- Monitor the invasion of Perennial Veldt Grass (*Ehrharta calycina*) at Kiata and explore control techniques.
- If funding is available, fence the Castlemaine site with netting to prevent habitat degradation by Rabbits as well as to control illegal activities and to better manage public use of the site.

Captive Colony

Establish a captive colony in the Royal Melbourne Zoological Gardens to study the ecological requirements of the butterfly and to gain a better understanding of its complex life cycle. It is desirable for management purposes that all natural components and the complete life history of the butterfly be

well understood. Research of this nature is needed to ascertain the long-term ramifications and implications of a translocation program. Residential blocks surrounding the butterfly reserves in Eltham and containing remnant butterfly populations are soon to be developed. The larvae, plants and ants from these sites should be utilised for the establishment of a captive breeding colony, or transferred to suitable sites. Burning may be seen as an appropriate or required management technique, and wildfires may also occur. A captive colony may provide suitable stocks for translocation if burning causes local extinctions. Ideally, a captive colony should also be used for interpretation activities, studies in population genetics, and research in basic biology.

Legislative Powers Operating

Legislation

Wildlife Act 1975 - regulates the taking and possessing of wildlife. Invertebrates listed under Schedule 2 of the *Flora and Fauna Guarantee Act 1988* become 'Protected Wildlife' under the *Wildlife Act*.

Flora and Fauna Guarantee Act 1988 - provides for the protection of flora and fauna in Victoria and the declaration of critical habitat if so designated.

Planning and Environment Act 1987 - provides for planning scheme controls and amendments, and allows for establishing Section 173 agreements.

Crown Land (Reserves) Act 1975 - provides for the reservation of areas of Crown land and for determining a specific purpose and reservation status for such land.

Victorian Conservation Trust Act 1972 - allows for conservation covenants over private property.

Licence/Permit Conditions

Once listed under the *Flora and Fauna Guarantee Act 1988*, a permit to collect the species must be obtained via the Wildlife Licensing Section of the Flora and Fauna Branch, CNR.

A permit to trap, take or possess specimens of the Eltham Copper Butterfly should only be issued if the Department is satisfied that the proposal has a direct benefit to the conservation of the species.

Consultation and Community Participation

There have been:

Media Coverage

- Articles in the local press in the Eltham-Greensborough suburbs and rural areas including Kiata and Castlemaine.

Distribution of Information

- Production of a poster on the Eltham Copper Butterfly.
- Production of extension material within a Habitat Management Teacher's Guide (CFL 1989) for use in schools.

Management Activities

- Liaison with VCT regarding management of the Western Diosma Road Colony.

- Liaison with Eltham Shire regarding ongoing management of existing sites and planning controls over private land.
- Liaison with Shire of Castlemaine and the Botanic Gardens Management Committee in relation to the ongoing management at the Castlemaine site.
Discussions with the Kalimna Park Preservation Society and entomologist David Crosby in relation to the establishment of an additional butterfly colony in the Castlemaine area.
- Discussions with the Invertebrate Survey Department, Museum of Victoria relating to butterfly management and monitoring.
- Formation of the Friends of Eltham Copper Butterfly volunteer group.
- Assistance from the Australian Trust for Conservation Volunteers to undertake drainage works at the Western Diosma Road Colony.
- Participation by the Castlemaine Field Naturalists in weeding programs at the Castlemaine colony.
- Community consultation as part of the planning process when preparing the management plan.

There will be:

- Continued liaison with the above-mentioned participants (and others) in relation to butterfly conservation and habitat management.
- Ongoing implementation of the recommendations in the management plan relating to community awareness and involvement.
- Publicity and the development of a public awareness program in conjunction with launching the Action Statement.
- Production of extension and interpretive material to increase public awareness, and activities in local schools to familiarise students with ecological communities and their inhabitants.
- Continued support to the various 'Friends' groups, Castlemaine Field Naturalists and other community groups to assist and participate in works programs and other activities designed to promote community education and awareness of the Eltham Copper Butterfly.

Implementation, Evaluation and Review

Regional Managers of the Melbourne, Horsham and Bendigo Regions will be primarily responsible for overseeing the implementation of this action statement. The Flora and Fauna Guarantee Officers of the Melbourne, Horsham and Bendigo Regions will annually monitor the implementation of the management actions and evaluate their effectiveness in meeting the stated objectives. Actions developed and implemented specifically in other regions of CNR will be the responsibility of the respective Regional Managers.

Contacts

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Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

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Acknowledgments

The advice and comments by Leigh Ahern (CNR Wildlife Management Section) and Pat Vaughan have contributed significantly to both the biological and management components of this action statement.