

STOTTS ISLAND NATURE RESERVE
PLAN OF MANAGEMENT

National Parks and Wildlife Service
March 2001

This plan of management was adopted by the Minister for the Environment on 22nd March 2001.

Acknowledgments: Julia Millar was the principal author of this plan, with assistance from local resident Bruce Chick, Northern Rivers Regional staff and the Northern Directorate planning staff.

NSW National Parks and Wildlife Service

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FOREWORD

Stotts Island Nature Reserve covers an area of approximately 160 hectares and is located in the Tweed River in far north eastern New South Wales, 12 kilometres south east of Murwillumbah. The whole island was gazetted as a nature reserve in 1971.

The reserve is low lying and subject to periodic flooding. The island is the largest remnant of subtropical floodplain rainforest remaining in New South Wales. Floodplain rainforest is listed as an endangered ecological community under the *Threatened Species Conservation Act 1995*. Areas of wetland also occur within the reserve. The reserve contains important habitat for at least 7 species of threatened fauna including the Mitchell's rainforest snail for which a separate recovery has been prepared.

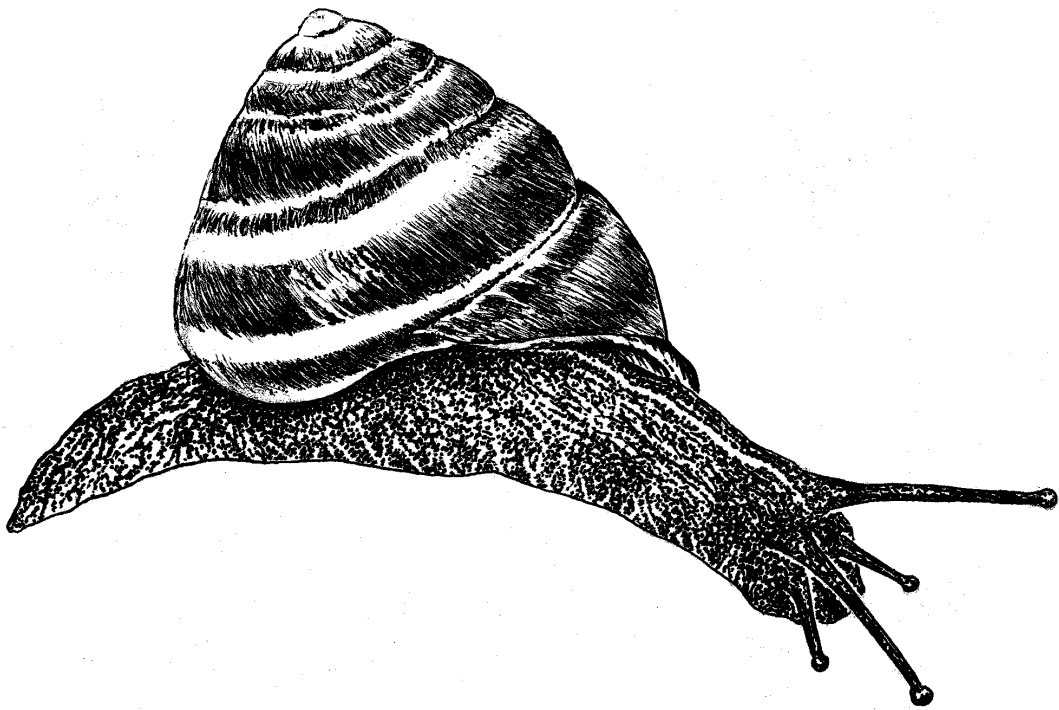
The plan of management recognises the conservation and research values of the reserve. In order to minimise impacts to the sensitive habitat and threatened species in the reserve, visitor facilities will not be provided.

The draft plan of management was placed on public exhibition for a two month period from July to September 2000. The draft plan has been amended to reflect comments received from both the public exhibition and the NSW National Parks and Wildlife Advisory Council.

This plan of management establishes the scheme of operations for Stotts Island Nature Reserve. In accordance with the provisions of Section 76 of the *National Parks and Wildlife Act 1974*, this plan is hereby adopted.

BOB DEBUS

Minister for the Environment



The endangered Mitchell's rainforest snail (*Thersites mitchellae*).

(Illustration by Ann Sheppard)

MANAGEMENT CONTEXT

Location and Regional Setting

Stotts Island Nature Reserve (referred to as the Reserve in this plan) has an area of approximately 160 hectares. The entire Reserve is low-lying, much of it being flood prone. It is located in the Tweed River in far north-eastern New South Wales, 12 kilometres NE of Murwillumbah (see fig. 1). The island was declared a nature reserve on 25 June 1971.

The Reserve is adjacent to an established recreation and conservation area known as Bruce Chick Conservation Park, where there has been extensive rehabilitation of rainforest species. Bruce Chick Conservation Park is managed by Tweed Shire Council. Other surrounding land uses are predominantly sugar cane. The Pacific Highway runs close to the southern boundary of the Reserve.

Natural and cultural heritage values – a summary

Landform and Hydrology

Stotts Island consists of Quaternary and Recent alluvium that is being eroded on the upstream side of the Reserve, especially during floods. The deposition of silts and the introduction of weed species occur during times of floods on the Reserve.

Stotts Island is located in the lower reaches of the Tweed River (refer to figures 1 and 2), and as such undergoes continuous reshaping by erosion and deposition of its perimeter. The island is low-lying, subject to periodic flooding and poorly drained. The water table is, therefore, close to the surface of the island. A natural drainage channel runs between the western and northern parts of the island almost dividing it in two.

The Reserve is separated from the “mainland” by a narrow canal on the south side of the island. Into this canal flow a number of constructed drains that remove excess water from the cane fields to the south of the Pacific Highway. These drains are likely to contribute silt and nutrients to the canal. Cane farmers wish to see the canal remain free flowing to ensure floodwaters do not back up on their cane fields.

Landscape

Stotts Island Nature Reserve affords important landscape values that are appreciated from the surrounding countryside and river, and to travellers on the Pacific Highway.

Native Flora

The vegetation on Stotts Island is identified as lowland subtropical rainforests and wetlands. It consists of a variety of vegetation communities such as palm rainforest, palm rainforest with hoop pine, tall fringing subtropical rainforest, mangrove forest and vine thicket. Additional vegetation communities present on the Reserve include Casuarina forest, paperbark swamp, reed swamp and lily swamp.

Stotts Island Nature Reserve contains the largest remnant of subtropical rainforest on riverine floodplain in New South Wales. Lowland rainforest on floodplain occurring on the north coast of New South Wales is listed as an Endangered Ecological Community under the *NSW Threatened Species Conservation Act 1995*. The island contains the largest and most intact reminder of the once vast forests that grew on the Tweed River flats. Hortons Creek Nature Reserve near Nymboida and Stotts Island Nature Reserve contain the only significant remaining stands of the red cedar-teak suballiance.

The palm glade forest (dominated by bangalow and cabbage palm) is the largest such area conserved in NSW (77 hectares). The Reserve contains at least eight rare and endangered plant species. A Cigar Cassia (*Cassia brewsteri var marksiana*) is of importance as it is possibly the largest, and only protected, specimen in NSW.

The Reserve complements the Central Eastern Rainforest Reserves of Australia (CERRA) World Heritage area on the surrounding Tweed, Nightcap and McPherson Ranges, and provides important habitat for altitudinal migration of bird and bat species.

Native Fauna

Studies on the Reserve have identified 47 bird species, 6 species of lizards, 3 species of snakes and 3 species of frogs. Very few studies have been carried out to identify mammal populations. The Reserve supports a rich and diverse land snail fauna.

Stotts Island is an important winter foraging area for seasonal altitudinal migrants such as threatened species of fruit doves and nectivorous bat species. The continued existence of these species is dependent on resources found in coastal lowland areas.

Threatened species have been observed on the Reserve including ospreys, black bittern, rose-crowned fruit dove, wompoo pigeon, black-necked stork, black flying fox and Mitchell's rainforest snail (*Thersites mitchellae*). Other threatened species likely to occur on the Reserve include the superb fruit dove, yellow-eyed cuckoo shrike and eastern tube-nosed bat.

Cultural Heritage

There is no known evidence of Aboriginal occupation of the Reserve, but it is likely that the rainforest environment was a rich source of food and materials for Aboriginal people. In the mid 1850s ticket-of-leave (ex-convict) settlers logged the precious cedar in the Reserve's rainforests. Stotts Island became a reserve for timber in 1878 and a nature reserve in 1971.

Jetties were built on the island to provide access, although there is no evidence of these today. There was a walking track on the island, which is now overgrown, that was largely used by river-based tour groups.

Recreation

Visitor access is no longer provided on, or to, the Reserve because of the size, significance and sensitivity of the habitat and threatened species. The adjoining Bruce Chick Conservation Park provides an excellent opportunity for the public to experience lowland rainforest and observe the Reserve, while providing good facilities for day visitors and highway travellers.

Threats to Reserve values

Weeds

Introduced plants pose the greatest threat to the values of the Reserve.

Twenty-four plant pest species have been identified in the Reserve (Joseph 1995). The study found that while the Reserve's vegetation is generally in a sound condition, much of the fringing subtropical rainforest has been subject to degradation by a number of weed species such as madeira vine (*Anredera cordifolia*), cat's claw (*Macfadyena unguis-cati*), moonflower (*Ipomoea alba*) and lantana (*Lantana camara*). Periodic flooding further promotes the spread of weeds through the distribution and reintroduction of propagules.

Introduced animals

A cat, cane toads and introduced rats have been observed in the Reserve. It is not fully known what impact these species have on the Reserve's native fauna but predation on the Mitchell's rainforest snail is likely (NPWS 2000).

Figure 1. Location Map of Stotts Island

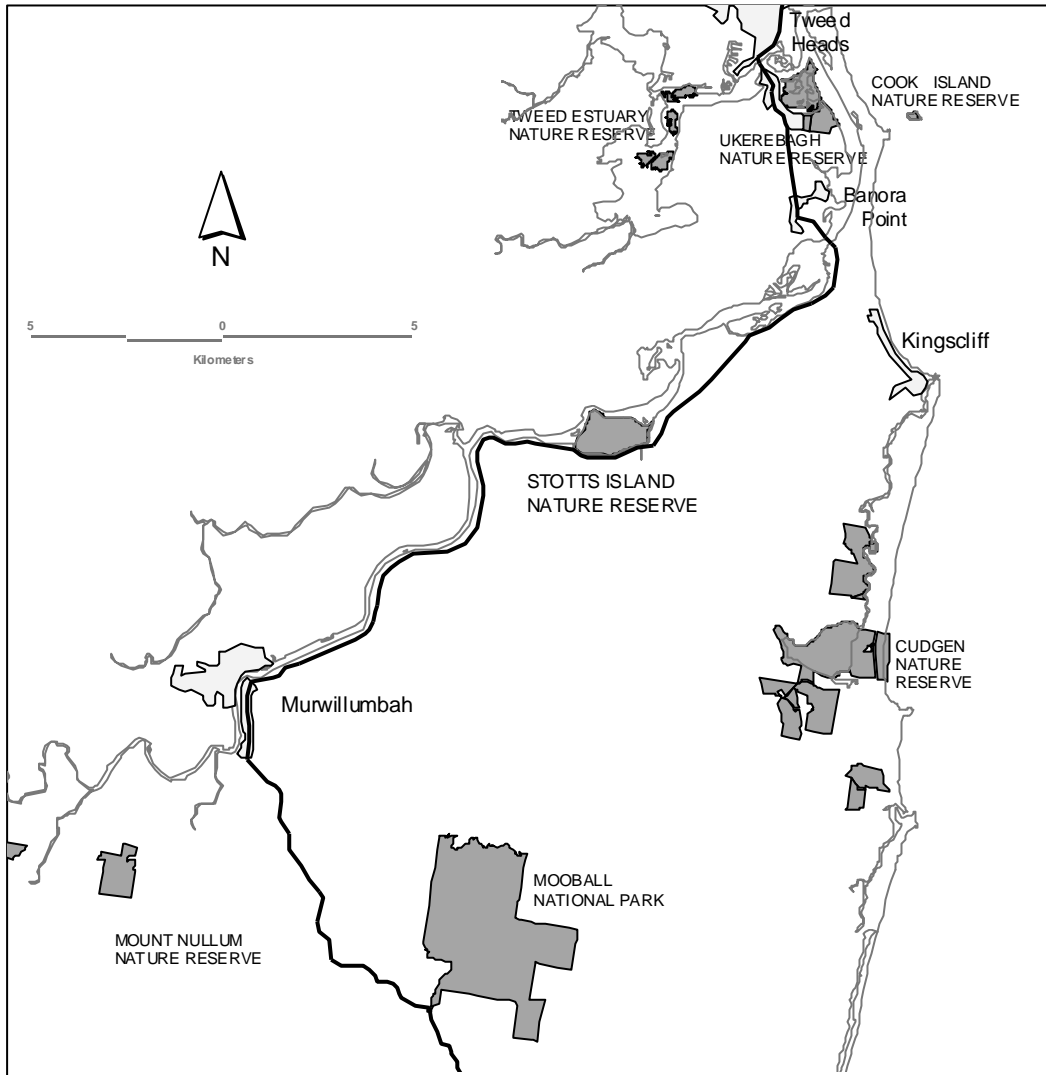
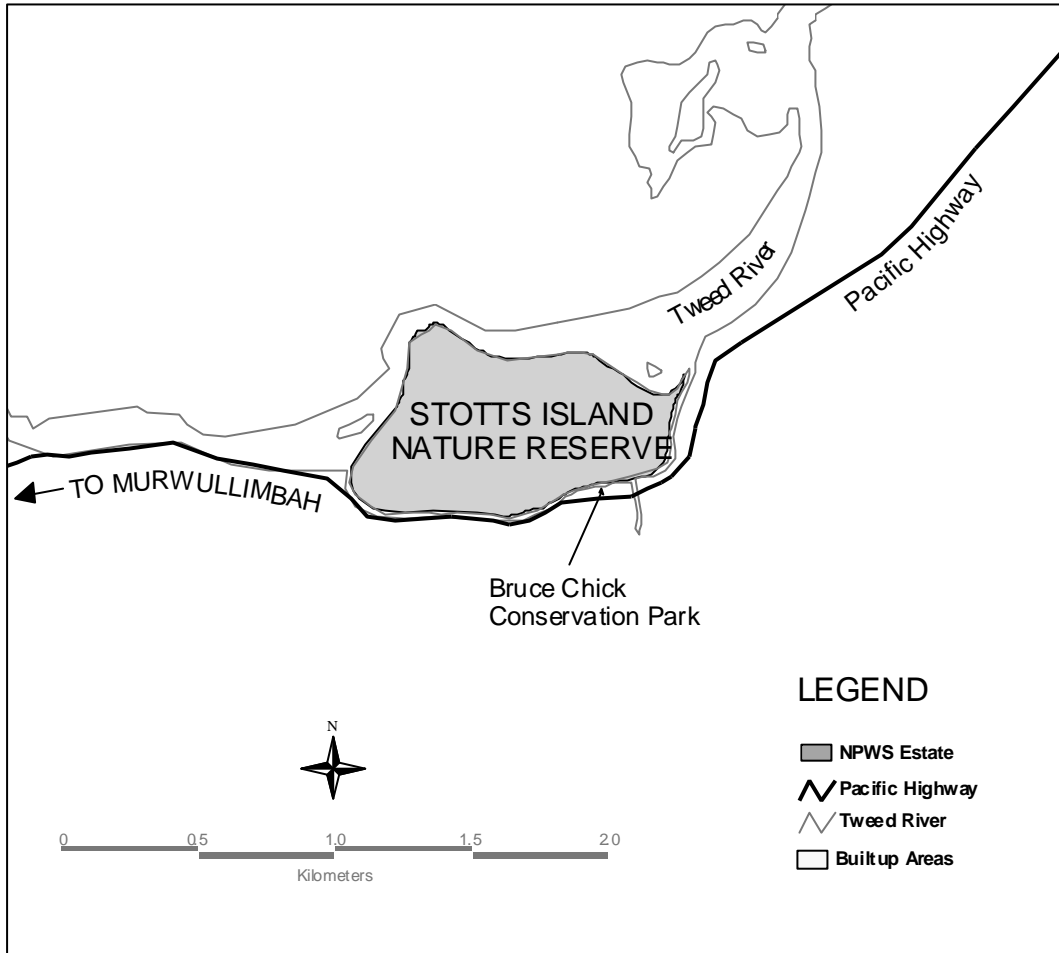


Figure 2. Map of Stotts Island



MANAGEMENT FRAMEWORK

Legislation

Nature reserves are considered to be valuable refuge areas where natural processes, phenomena and wildlife are protected and can be studied. Nature reserves, unlike national parks, do not include provision of recreation opportunities as a major management objective.

The purpose of a nature reserve is defined under the *National Parks and Wildlife Act 1974* as being:

- the care, propagation, preservation and conservation of wildlife;
- the care, preservation and conservation of natural environments and natural phenomena;
- the study of wildlife, natural environments and natural phenomena; and
- the promotion of the appreciation and enjoyment of wildlife, natural environments and natural phenomena.

Under the *Threatened Species Conservation Act 1995* lowland rainforest on the floodplain on the NSW north coast is listed as an endangered ecological community. Stotts Island is the largest remnant of this ecological community. The Reserve also supports the largest remaining population of the endangered Mitchell's rainforest snail (*Thersites mitchellae*) and is proposed to be nominated as a critical habitat for the species (NPWS 2000).

General Objectives for Nature Reserves

The following general objectives relate to the management of nature reserves in New South Wales:

- protection and preservation of scenic and natural features,
- maintenance of natural processes as far as it is possible,
- conservation of wildlife;
- preservation of Aboriginal heritage and historic features;
- protection of catchment values, and
- encouragement of scientific and educational inquiry into environmental features and processes.

Specific Management Objectives

The management objectives for Stotts Island Nature Reserve are to:

- preserve the Reserve as one of the last remnants of lowland floodplain rainforest,
- protect the Reserve as critical habitat for the threatened Mitchell's rainforest snail, and
- focus on research, environmental management and control of weed species.

MANAGEMENT STRATEGIES

Current situation	Desired outcomes	Proposed actions and guidelines	Priority
<p>Soil and Hydrology. The banks of the island are eroding on the upstream side whilst deposition is occurring on the downstream side. Siltation and erosion have probably increased following settlement and land clearing in the Tweed Valley.</p>	<ul style="list-style-type: none"> • Natural erosion and hydrological processes are allowed continue. • There is no disturbance to fringing native vegetation on Stotts island. 	<ul style="list-style-type: none"> • Living native vegetation on the banks of the canal (on the southern side of the Reserve) is not to be disturbed in an attempt to improve drainage in the canal. Dead limbs and snags within, or overhanging, the canal may be removed if acceptable to the Tweed River Management Plan Advisory Committee, NSW Fisheries, DLWC, and NPWS. 	High
		<ul style="list-style-type: none"> • Liaise with TRMPAC and relevant government agencies to monitor stream bank erosion on the Island. 	Low
<p>Native flora and fauna. Occurrence of important lowland sub-tropical rainforests. Some plant theft is evident. The Reserve provides habitat for a number of threatened species.</p>	<ul style="list-style-type: none"> • Rainforest and wetland values are not diminished. • Plant theft ceases. • The habitat for the Mitchell's rainforest snail is protected. • The native fauna is documented. • Threatened fauna populations do not decline. 	<ul style="list-style-type: none"> • A fauna study will be undertaken. 	Medium
		<ul style="list-style-type: none"> • A proposal will be prepared to declare the Reserve as critical habitat for the Mitchell's rainforest snail. 	High
		<ul style="list-style-type: none"> • The draft recovery plan for the Mitchell's rainforest snail will be finalised and its recommendations implemented. • Regular monitoring and enforcement action will be undertaken to address plant theft from the Reserve. 	High

Current situation	Desired outcomes	Proposed actions and guidelines	Priority
<p>Scientific and Education. Queensland Museum, Griffith University and the NSW NPWS have conducted research in the Reserve, adding to the knowledge of Reserve values and threats to these values.</p>	<ul style="list-style-type: none"> Scientific study that benefits management of the Reserve is encouraged, and studies and monitoring programs are undertaken. 	<ul style="list-style-type: none"> Appropriate research that will benefit the management of the Reserve (for example, native fauna studies; monitoring of introduced species; hydrology and siltation of the canal; geomorphic changes to the island and canal, and more detailed studies into the rainforest values of the Reserve) will be encouraged. 	Medium
<p>Pest species. Twenty-four pest plant species have been identified in the Reserve. A Restoration and Rehabilitation Plan has been prepared for the Reserve (Joseph, 1995). Introduced animals have been observed in the Reserve.</p>	<ul style="list-style-type: none"> Weed competition to native plant communities and threatened plant species is reduced. Introduced animals are controlled and where possible eliminated from the Reserve. 	<ul style="list-style-type: none"> Weeds will be controlled in accordance with the Restoration and Rehabilitation Plan. The actions relating to pest species identified in the Recovery Plan for the Mitchell's rainforest snail (NPWS 2000) will be implemented. Locally indigenous propagation material is recommended for restoration and rehabilitation work carried out within or adjacent to the Reserve in order to protect the genetic integrity of the rainforest vegetation. 	High High High
<p>Access. The Reserve can only be reached by boat. No landing facilities exist on the island. Access is not promoted due to the high ecological integrity of the Reserve.</p>	<ul style="list-style-type: none"> Public access continues to be discouraged. 	<ul style="list-style-type: none"> Access facilities to the Reserve will not be provided. Boat landing on the Reserve will be discouraged by not constructing landing facilities or visitor facilities. 	High High

Current situation	Desired outcomes	Proposed actions and guidelines	Priority
<p>Recreation. No formed tracks or paths are now evident but old picnic tables remain on the island. The adjoining Bruce Chick Park provides good picnic facilities and a short rainforest walk.</p>	<ul style="list-style-type: none"> • No recreation facilities are provided in the Reserve. • No impact of recreational use is evident in the Reserve. 	<ul style="list-style-type: none"> • Recreation facilities will not be provided on the Reserve. • Commercial activities (eg. tours) will not be permitted in the Reserve. • Existing picnic tables will be removed from the Reserve. • “No camping or picnicking” regulatory signs will be erected in the Reserve. 	<p>High</p> <p>High</p> <p>High</p> <p>Medium</p>
<p>Interpretation and Signage. The interpretative display in the shelter at the adjoining Bruce Chick Park is outdated. The park name signs on the Reserve are not to Service standards.</p>	<ul style="list-style-type: none"> • The Interpretative display in the adjoining Bruce Chick Park is updated, and the display clearly highlights the values of the Reserve. • Appropriate signage on the Reserve is provided. 	<ul style="list-style-type: none"> • Assist the Tweed Shire with interpretation of the Reserve and the Bruce Chick Conservation Park, including an updating of the existing display in Bruce Chick Park. The interpretation will explain the importance of protecting an endangered ecological community and critical habitat for the Mitchell’s rainforest snail and will emphasise the significance of the Reserve as a remnant of the forests that once covered the Tweed River floodplain. The interpretation will also explain the link between conserving lowland remnants and the integrity and viability of the nearby World Heritage listed rainforests. • The Reserve identification signs will be updated. 	<p>Medium</p> <p>Medium</p>

Current status	Desired outcomes	Proposed actions and guidelines	Priority
<p>Cultural Heritage. There are no known Aboriginal or historic sites in the Reserve, however there has been an interesting history of timber cutting.</p>	<ul style="list-style-type: none"> The cultural heritage of the Reserve is interpreted in the Bruce Chick Conservation Park display. 	<ul style="list-style-type: none"> The Reserve’s cultural heritage will be interpreted in the display at Bruce Chick Conservation Park. Appropriate opportunistic studies will be encouraged into the Reserve’s cultural heritage. 	<p>Low</p> <p>Low</p>

Legend for priorities

High priority actions are those that are imperative to the achievement of management objectives identified in this Plan and need to be implemented in the near future to prevent degradation of the natural and cultural values or physical resources of the Reserve, may incur significant costs associated with rehabilitation at a later date, and/or present an unacceptable risk to the public.

Medium priority actions are those that are necessary to achieve management objectives but will be implemented as resources become available because the time frame for their implementation is not urgent.

Low priority actions are desirable to achieve management objectives but can wait until resources become available.

KEY REFERENCES:

Floyd, A.G. (1990), *Australian Rainforests in New South Wales*. Volume 2. Surrey Beatty and Sons in association with the NW National Parks and Wildlife Service, Sydney.

Joseph, Rosemary (1995), *Rainforest Remnants Restoration and Rehabilitation Project, incorporating Plant Pest Species Survey and Prior Works Documentation, Stott's Island Nature Reserve*, NSW NPWS report.

NPWS (2000), *Stotts Island Nature Reserve: Draft Plan of Management*.

NPWS (1998), *Endangered ecological communities; implications for listing*. Threatened Species Information Fact Sheet, NSW NPWS.

NPWS (2000), *Mitchell's Rainforest Snail Recovery Plan*. Draft for public comment, May 2000.

FURTHER INQUIRIES:

Inquiries about this plan of management or Stotts Island Nature Reserve should be directed to the NPWS Tweed Area Office, World Heritage Rainforest Centre, Pacific Highway, Murwillumbah, on telephone 02 6672 6360.



The endangered Mitchell's rainforest snail (*Thersites mitchellae*).

(Illustration by Ann Sheppard)