

# The Royal as an education resource

Developing an interactive identification CD-Rom on Coastal Plants of the RNP

Ralph Cartwright  
Sutherland Group

<http://sutherland.austplants.com.au/>



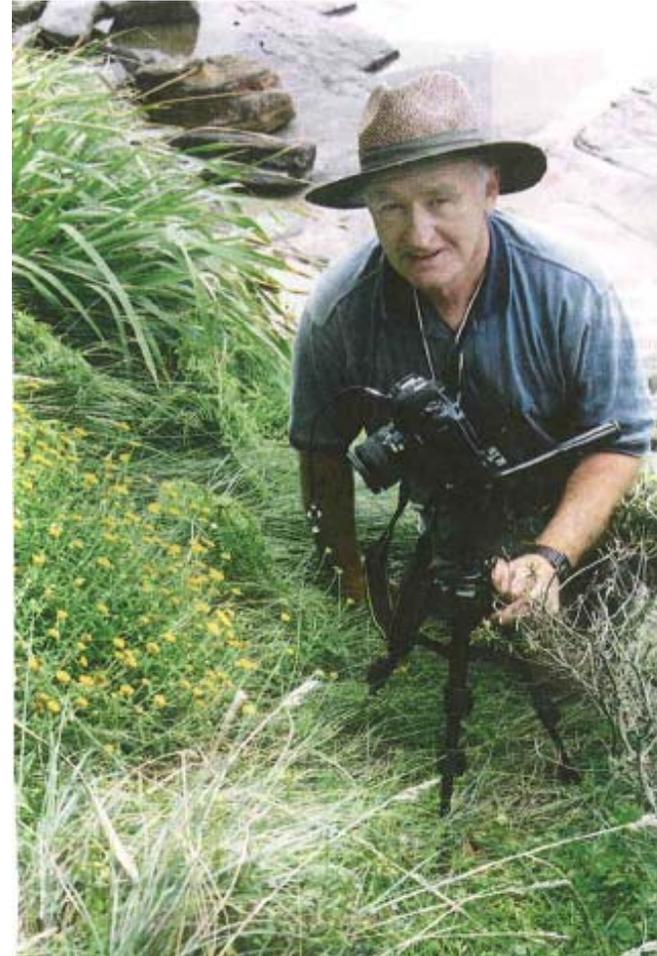


# Outline

- How the CD came about
- What's on the CD
- A community resource

# Doug Irving had a vision

- To create a CD with photos and botanical descriptions of all the plants in the Royal National Park
- Designed so that anyone could use it – not just botanists!
- Focused on 300 plants seen along the Coast Walk Track in RNP
- Many of these plants grow in other parts of Sydney





# **“But I’m not a botanist!”**

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- Margaret Bradhurst, Gwen Caddy, Connie McPherson and Aileen Phipps worked with Doug to find, record and photograph the plants
- Doug catalogued the information and developed the interactive identification software



# A team effort

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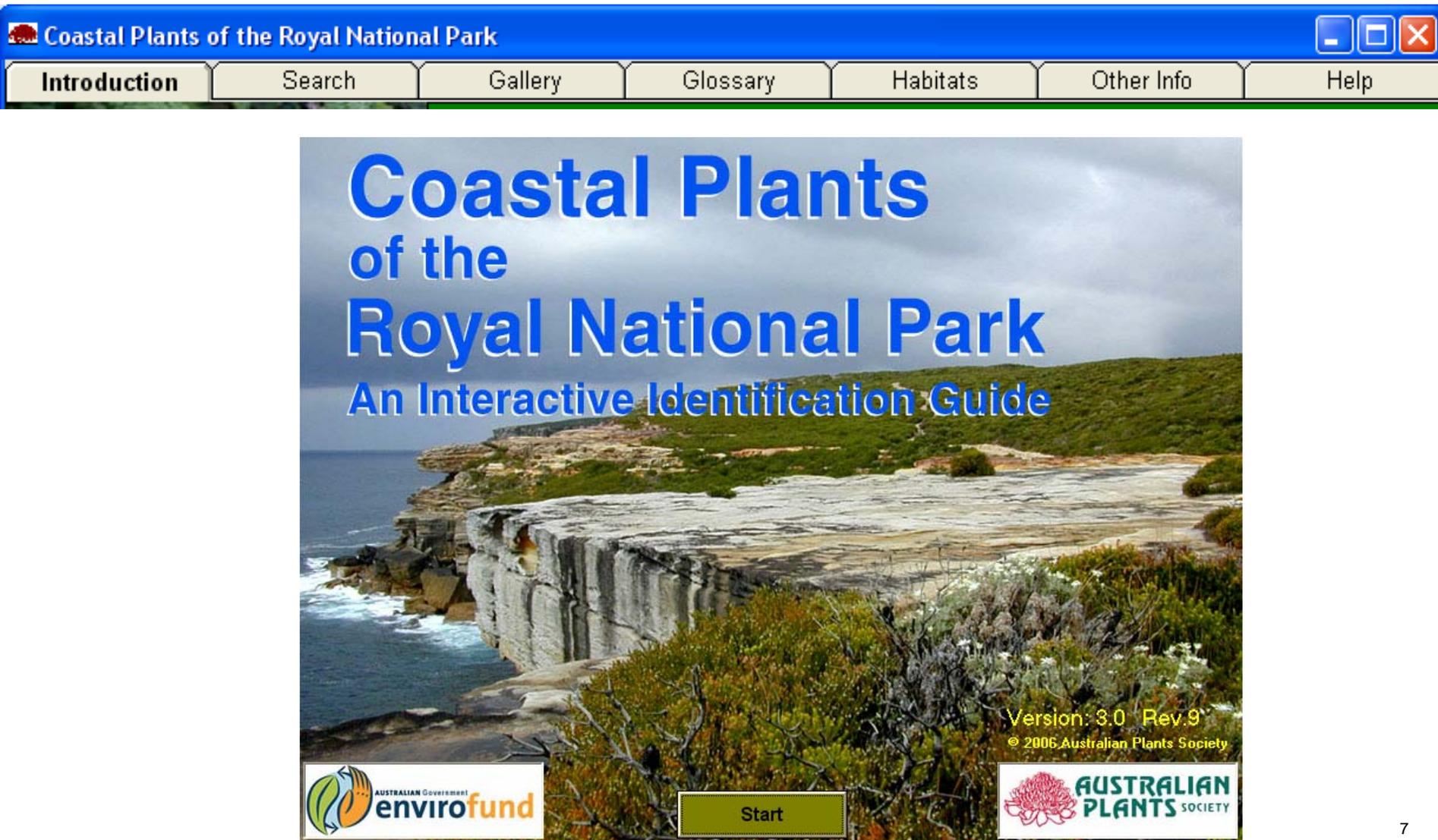
- Doug did not see his dream become a reality
- A team effort to complete the project
  - Doug Rickard coordinated the project
  - Ruchir Sodhani looked after the software
  - Plus external help
- Financial support from
  - Natural Heritage Trust Envirofund
  - Australian Plants Society NSW and Sutherland Group

# The CD-Rom a reality

- Official launch in November 2006 by Bob Walshe at Audley, RNP
- It retained Doug's essentials
  - easy to use
  - you don't have to be a botanist
  - you can make mistakes
- Meeting a need.. over 1,350 sales



# What's on the CD?



# 1. Introduction

**Coastal Plants of the Royal National Park**

**Introduction** Search Gallery Glossary Habitats Other Info Help

## USING THIS SOFTWARE

### We've Tried To Keep It Simple

This software is designed so that it is easy to use both by people with absolutely no botanical knowledge as well as by native plant enthusiasts, students and botanists. But before you start using it and start searching for information about the plants, it is suggested that you read through the rest of this **Introduction** Section. This **Using This Software** Screen is a very brief introduction to how you can use this software. To get complete details of all the facilities offered by this software left click on the **Help Tab** at the top of this Screen.

### Finding Information On The Plants In The Coastal Areas Of The Park

#### If You Know The Name Of The Plant

You may know either the botanical or common name of the plant on which you want information. If so, click on the **Search Tab** at the top of this Screen, this will get you to the **Search Screen**. Then click on the **'For text in: Names' Button** and type in the name of the plant. Clicking on the **'Apply Button'** will give you the botanical name of the plant, or, if you have entered all or part of its common name, a list of all the plants to which that name refers. Clicking on the **'View Plants' Button** will take you to the page in the **Gallery** Screen that has information on of the plant and pictures of it, its leaves, flowers, fruit etc..

- About This Software
- Using This Software**
- Getting To The Park
- Map Of The Park
- Coastal Area Of The Park
- Walking In The Park
- Taking Care
- Park Regulations
- History Of The Park

**Print**

**AUSTRALIAN PLANTS SOCIETY**

# 2. Search

**Coastal Plants of the Royal National Park**

Introduction **Search** Gallery Glossary Habitats Other Info Help

Search: \_\_\_\_\_

For features in:  Flowering Plants  Ferns

For text in:  Names

Select your search criteria (Plant features to search for):

- Type
- Flowers
  - Shape
    - Regular
    - Irregular
    - Globular
    - Cylindrical
    - Pea
    - Tubular/ Bell-shaped
  - Form
  - Colour(s)
  - Petal/Sepal No.
  - Flowering Month(s)
- Fruit
- Leaves
- Bark
- Habitat

Search criteria selected:

Search >> For features in >> Flowering Plants  
Type >> Shrub  
Flowers >> Shape >> Tubular/ Bell-shaped  
Flowers >> Form >> Clusters  
Flowers >> Colour(s) >> Red  
Flowers >> Colour(s) >> White

Search Results (Click Apply to update): 256 items

These plants match one or more criteria that you have selected.  
The list is ordered by score, with the most likely plants at the top.

Flowering Plant Name	Score
Darwinia fascicularis	5
Epacris longiflora	5
Astroloma pinifolium	4
Ceratopetalum gummiferum	4
Clerodendrum tomentosum	4
Conospermum ellipticum	4
Cryptandra ericoides	4
Epacris coriacea	4
Epacris microphylla	4

Expand All Collapse All Unselect All Apply View Plants

# 2. Search

- By features of plant – Type, Flowers, Fruit, Leaf, Bark, Habitat
- OR
- By name – botanical, common, family

Coastal Plants of the Royal National Park

Introduction Search Gallery Glossary Habitats Other Info Help

Search:

For features in:  Flowering Plants  Ferns

For text in:  Names

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    - Cylindrical
    - Pea
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  - Form
  - Colour(s)
  - Petal/Sepal No.
  - Flowering Month(s)
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- Bark
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Epacris longiflora	5
Astroloma pinifolium	4
Ceratopetalum gummiferum	4
Clerodendrum tomentosum	4
Conospermum ellipticum	4
Cryptandra ericoides	4
Epacris coriacea	4
Epacris microphylla	4

Expand All Collapse All Unselect All Apply View Plants

# Plant features

**Flowering Plant Type:** Tree | Shrub | Herb | Climber/ Scrambler | Sedge/ Rush

**Flower Shape:** Regular | Irregular | Globular | Cylindrical | Pea | Tubular/ Bell shaped

**Flower Form:** Single | Cluster | Spike

**Flower Colour:** Black | Blue | Cream | Green | Grey | Orange | Mauve | Pink | Purple | Red | Rust | Violet | White | Yellow

**Flower Petal/ Sepal No.:** Few (1, 2 or 3) | 4 | 5 | 6 | Many (more than 6)

**Flowering Months:** Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

**Fruit Type:** Berry | Capsule | Drupe | Cone | Pod | Other

**Fruit Colour:** Black | Blue | Brown | Cream | Green | Grey | Orange | Pink | Red | Rust | Violet | White | Yellow

**Fruit Other Features:** Fleshy | Hairy | Hard | Ribbed | Woody

**Leaf Arrangement:** Alternate | Basal | Crowded | Leaves Absent/ Reduced | Opposite | Tufted | Whorled

**Leaf Type:** Simple | Compound

**Leaf Shape:** Oval | Linear | Needle-shaped | Heart-shaped | Round | Sickle | Spoon | Strap-like | Other

**Leaf Length:** Tiny (less than 1 cm) | Short (1 to 5 cm) | Medium (5 to 15 cm) | Long (15 to 30 cm) | Very Long (> 30 cm)

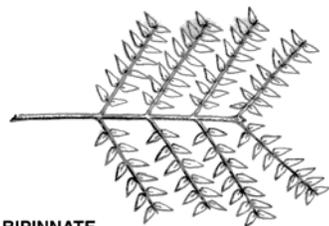
**Leaf Margins:** Entire | Lobed/ Divided | Toothed/ Serrated | Wavy

**Leaf Attachment:** Stalked | Unstalked | Stem-clasping | Stem near centre of leaf

**Leaf Other Features:** Aromatic | Discolourous | Hairy | Hard | Rough | Soft | Succulent | Sharp-tip | Tapered-tip | Oil dots/ glands

**Bark:** Full | Part | Fibrous/ Stringy | Papery/ Flaky | Rough/ Furrowed | Scaly/ Corky | Scribbly | Smooth

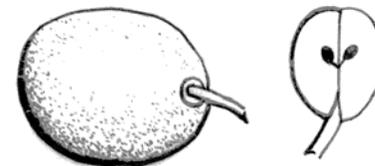
**Habitat:** Rainforest | Wet sclerophyll forest | Dry sclerophyll forest | Heathland | Beach strand



BIPINNATE



BASAL



BERRY



ALTERNATE

# Plant features – ferns

## Type: Fern

**Trunk:** With Trunk | No Trunk

**Fronde Form:** Simple | Compound

**Fronde Length:** Short (1 to 5 cm) | Medium (5 to 15 cm) | Long (15 to 30 cm) | Very Long (> 30 cm)

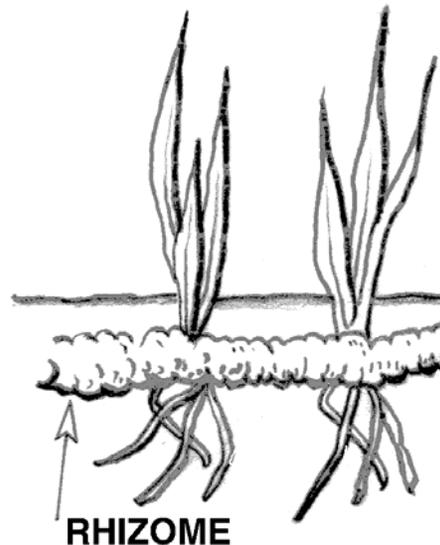
**Fronde Other Features:** Glossy | Hairy | Hard | Soft | Toothed

**Sori Arrangement:** Covering surface | In rows | Near margins

**Rhizome Type:** Creeping | Erect | Underground

**Rhizome Other Features:** Hairy | Scaly

**Habitat:** Rainforest | Wet sclerophyll forest | Dry sclerophyll forest | Heathland | Beach strand | Fresh water | Saline water



# How does it work

- It is not like a plant key (yes/no)
- It is based on probabilities
- Each feature scores 1 if it matches our database
- The highest scoring plants are listed in order
- Look at the photos to confirm ID
- Users can make mistakes!
- Focus on 5-6 most distinctive features



Search:

By features in:  Flowering Plants  FernsFor text in names:  All  Botanical  Common  Family

Select your search criteria (Plant features to search for):

- Sickle
- Spoon
- Strap-like
- [Other](#)
- Length
  - Tiny (less than 1 cm)
  - Short (1 to 5 cm)
  - Medium (5 to 15 cm)
  - Long (15 to 30 cm)
  - Very Long (Over 30 cm)
- Margins
  - Entire
  - Lobed/ Divided
  - Toothed/ Serrated
  - Wavy
- Attachment
  - Stalked
  - Unstalked
  - Stem-clasping
  - Stem near centre of leaf
- Other Features
  - Aromatic
  - Discolorous
  - Hairy
  - Hard
  - Rough
  - Soft
  - Succulent
  - Sharp-tip
  - Tapered-tip
  - Oil dots/Glands

Search criteria selected:

Search >> By features in >> Flowering Plants  
 Type >> Shrub  
 Flowers >> Shape >> Tubular/ Bell-shaped  
 Flowers >> Form >> Clusters  
 Flowers >> Colour(s) >> Red  
 Flowers >> Colour(s) >> White  
 Flowers >> Petal/Sepal No. >> 5  
 Flowers >> Flowering Month(s) >> September  
 Leaves >> Arrangement >> Crowded  
 Leaves >> Type >> Simple  
 Leaves >> Shape >> Heart-shaped  
 Leaves >> Length >> Tiny (less than 1 cm)  
 Leaves >> Margins >> Entire  
 Leaves >> Attachment >> Unstalked  
 Leaves >> Other Features >> Sharp-tip

Search Results (Click Apply to update): 279 items

These plants match one or more criteria that you have selected.

The list is ordered by score, with the most likely plants at the top.

Flowering Plant Name	Score
Epacris longiflora	14
Darwinia fascicularis	12
Epacris microphylla	12
Epacris coriacea	11
Epacris obtusifolia	11
Leucopogon microphyllus	11
Woolisia pungens	11
Astroloma pinifolium	10
Conospermum ellipticum	10
Cryptandra ericoides	10
Epacris pulchella	10
Leucopogon ericoides	10
Phyllota phyllicoides	10
Pultenaea daphnoides	10
Acacia ulicifolia	9
Brachyotum daphnoides	9

Expand All

Collapse All

Unselect All

Apply

View Plants

# 3. Gallery

- 1,200 photos of 300 plants
- Plant, Leaf, Flower, Fruit, Bark
- Use the Gallery in different ways
  - Browse all 300 plants by Botanical name
  - View search results listed by Score
  - View plant information



Choose plant to view:

 Display all plants Display search results

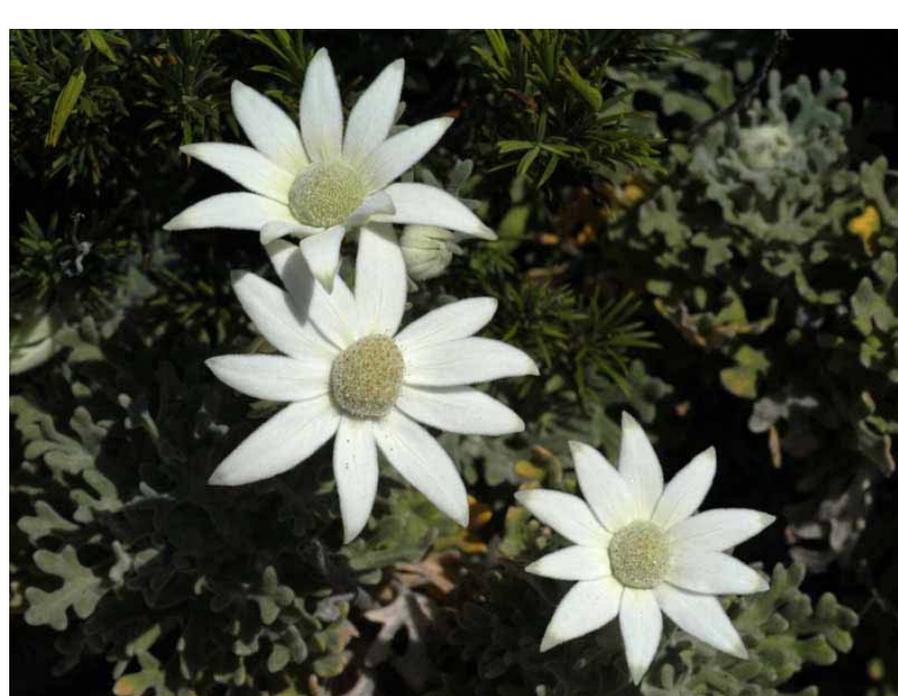
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Woolisia pungens	11	
Astroloma pinifolium	10	
Conospermum ellipticum	10	
Cryptandra ericoides	10	
Epacris pulchella	10	
Leucopogon ericoides	10	

**Epacris longiflora****Fuchsia Heath****Family:** Ericaceae**Plant:** An erect or straggling shrub up to 1.5m high.**Flowers:** Red tubular flowers 2-3cm long with 5 white lobes and five stamens. Flowers hang in rows below stiff wiry stems.**Flowering:** April-November.**Fruit:** A small cream capsule 3-4mm long.**Leaves:** Ovate to heart-shaped, 5-17mm long and 3-6mm wide with a fine sharp tip. The leaves have minutely toothed margins and parallel veins.**Habitat:** Usually in rocky areas in dry sclerophyll forest and heathland.**Features:** Long red tubular flowers with white tips. Sharp tips on leaves**Name:****Epacris** From Latin *epi* = upon and *akros* = the top

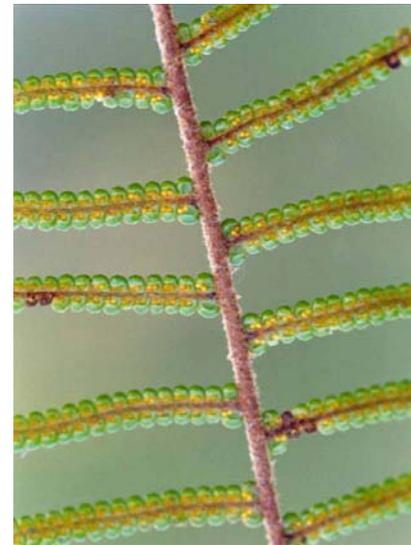
Choose image to view:

 Plant Leaf Bud Leaf Detail Female Flower Flower Frond Bark Young Leaf Male Flower Fruit Sori Spike Other

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# Gallery – Zoom

Xanthorrhoea resinifera

Choose image to view:

<input type="radio"/> Plant	<input type="radio"/> Leaf	<input type="radio"/> Bud	<input type="radio"/> Leaf Detail	<input type="radio"/> Female Flower
<input checked="" type="radio"/> Flower	<input type="radio"/> Frond	<input type="radio"/> Bark	<input type="radio"/> Young Leaf	<input type="radio"/> Male Flower
<input type="radio"/> Fruit	<input type="radio"/> Sori	<input type="radio"/> Spike	<input type="radio"/> Calyx/ Detail	

[Slideshow](#)  
[Return](#)



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# 4. Glossary

Coastal Plants of the Royal National Park

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Index  
 Find  
 History

Choose a term to view:

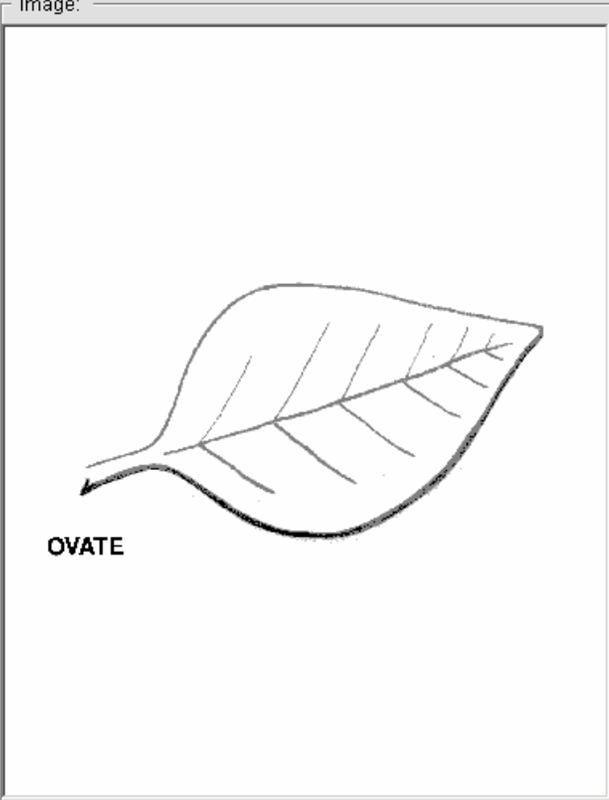
- Lignotuber
- Lignotubers
- Linear
- Lithophyte
- Lithophytic
- Lobe
- Lobed
- Lobed/ Divided
- Lobes
- Longitudinal
- Mallee
- Mallees
- Mangrove
- Margin
- Margins
- Mid-rib
- Mid-ribs
- Mid-vein
- Mid-veins
- Mucronate
- Multipinnate
- Needle-shaped
- Net veins
- Node
- Nodes
- Nut
- Nuts
- Oblanceolate
- Oblate
- Oblong
- Obovate
- Obtuse
- Open forest
- Opposite
- Oppositely
- Orbicular
- Oval
- Ovate
- Ovoid

Description:

**Ovate:**

With length 1 to 3 times the breadth, broadest in the middle.

Image:



**OVATE**

Previous Next Back Forward Return



**AUSTRALIAN PLANTS SOCIETY**

# 5. Habitats

## RAINFOREST

### How You'll Recognise That You're In A Rainforest

Rainforests generally have a tall, dense canopy of trees, a sparse understorey and a ground cover of litter. There are two types of rainforest in the Royal National Park - Littoral or Coastal Rainforest, and Warm Temperate Rainforest. The different types of rainforest tend to merge into one another. In some areas the rainforest margins are quite distinct, but in other areas the rainforest becomes intermingled with the Wet Sclerophyll Forest. Some of the many different plants that you will find in the rainforest are *Acmena smithii* (Lilly Pilly), *Backhousia myrtifolia* (Grey Myrtle), *Ceratopetalum apetalum* (Coachwood), *Schizomeria ovata* (Crah Apple) and the distinctive *Livistona australis* (Cabbage Tree Palm). In the understorey you will find *Rosewood*, *Cissus hypoglauca* (Giant Water Vine) plus a variety of ferns including *Bird's Nest Fern* and *Platycerium bifurcatum* (Elkhorn Fern).

### Littoral or Coastal Rainforest

Littoral or Coastal Rainforest is found near the sea and includes exposed areas. There are many ferns, small epiphytes and a low canopy.

### Warm Temperate Rainforest

With only a few tree species, Warm Temperate Rainforest is usually rather slender and many are covered with whitish to grey lichens. There are only a few climbers, large epiphytes and palms.

### Where You'll Find Rainforest

Rainforest is generally confined to the southern part of the Park on the richer soils derived from the Narrabeen Shales and usually on the soils with relatively high moisture content.

Click on **Habitat Map** in panel at the left of the screen to see



- Rainforest
- Sclerophyll Forest
- Heathland
- Beach Strand
- Fresh/ Saline Water
- Habitat Map

Print



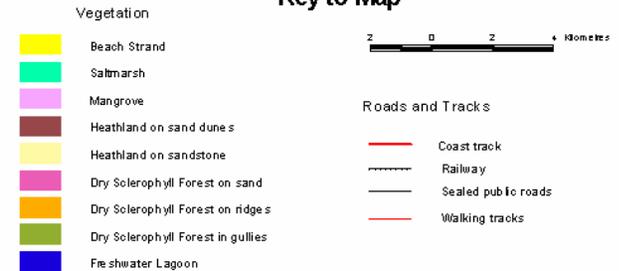
- Rainforest
- Sclerophyll Forest
- Heathland
- Beach Strand
- Fresh/ Saline Water
- Habitat Map

Print

## HABITAT MAP



### Key to Map



# 6. Other features

- How to identify a plant
  - Identification guidelines
  - Data collection form
  - Handy ID guide
- Plant lists
  - Featured plants
  - Other plants
- References
- Acknowledgements



# 7. Help!

Coastal Plants of the Royal National Park

Introduction Search Gallery Glossary Habitats Other Info Help

## Search

### Help for the 'Search' Screen

1. What does the 'Search' screen look like?
2. How can I get to the 'Search' screen?
3. When should I use the 'Search' screen?
4. What are the different parts of the 'Search' screen?
5. How do I search for a plant by its features?
6. How do I search for a plant by its name?
7. Why can I see 'Search Criteria' and 'Search Results' from a previous search?
8. How can I navigate in the 'Select your Search Criteria' panel?
9. How do I select and unselect Search Criteria?
10. What do some of the Search Criteria names mean?
11. How do I know at a glance what criteria I have selected?
12. How can I update the 'Search Results'?
13. How can I navigate in the 'Search Results' panel?
14. How should I interpret the 'Search Results'?
15. How can I view the details for a plant that is in my 'Search Results'?
16. How can I print this Help information?

Search  
 Gallery  
 Glossary  
 Other

Print

**AUSTRALIAN PLANTS SOCIETY**

# A community education resource

- Meeting a need... over 1,350 sales since Nov 2006
- Sold in various ways
  - Direct: presentations to groups eg APS, Probus, Rotary, NPA, Botanic Gardens
  - Shops: RNP Visitor Centre, Botanic Gardens shop, Sydney Wildflower Nursery
  - APS Sutherland website <http://sutherland.austplants.com.au/>
- Widely dispersed: Sutherland, Sydney and beyond
- Future developments
  - iApp or online version
  - Extension to cover more plants
  - Information on Aboriginal uses of plants
  - Interest from other groups as the framework is available to other groups, free



# A community education resource

- Scout Group Leaders, Hurstville  
*“Thank you for the good work with putting the CD together. Hubby and I love walking in the Royal and this CD will certainly help us to identify some of the beautiful plants we see but have little idea about their names. I can also help our Cub Scouts to learn more.”*
- Wakehurst Public School Duffys Forests Plant brochure  
*“I would like to thank you so much for allowing us to use the marvellous photos on the CD-Rom. Being able to use these greatly enhanced the quality of the booklet we produced. This booklet is a K-6 environmental education program where each child will learn at least one tree, shrub and groundcover per year.”*

