

## SHORT COMMUNICATION

### Ecology of Sydney Plants Project

Conventional floras and handbooks provide descriptions for identifying species, but give relatively little ecological and biological data. Yet such data is becoming increasingly relevant to researchers in many fields and to natural area managers, who have the task of trying to predict the ecological consequences of management regimes, such as fire frequency, on native vegetation. Such data are also important for environmental impact assessment and for predicting the effects of changes in drainage, water movement, wind exposure or nutrient conditions on plant species and communities.

The Sydney region is interpreted broadly, being defined here as by Beadle, Evans and Carolin in the *Flora of the Sydney Region*. It thus covers the area bounded by Newcastle, Singleton, Rylstone, Taralga and Nowra. Information provided will be largely complementary to taxonomic descriptions, and will include growth form, flowering and fruiting times, longevity and maturity periods, pollination and seed dispersal data, distribution, habitat and plant community, and responses to fire and disturbance.

The project will be based at the New South Wales National Herbarium and will involve gathering material from published and unpublished sources as well as herbarium records and field observations. Much of the information is difficult to obtain because it is either scattered through a wide range of publications, both scientific and general, or simply not available in written form, but held in the capacious memories of field and herbarium botanists. Often indeed no-one has noted, for example, whether a species resprouts after fire, or how it is dispersed. Direct field observations will therefore supplement the review of literature. The emphasis in the first instance will be on providing information that is available, and the project will inevitably demonstrate a lack of knowledge about many plant species. Collaboration with other ecologists and botanists as well as with other interested people will be sought.

The types of information to be gathered are indicated below:

Growth form	Locations
Longevity	Botanical subregions
Growing season	Habitat
Vegetative spread	Typical abundance
Time to first flowering	Vegetation
Pollen vector	Substrate
Time to first fruiting	Soil nutrient
Fruiting time	Soil drainage
Time of seed dispersal	Moisture supply
Seed production	Soil salinity
Appendages on dispersal unit	Soil pH range
Seed size	Shade
Seed weight	Exposure
Seed longevity	Altitude
Dormancy mechanism	Annual rainfall
Dispersal mechanism	Response to fire
Germination requirements	Seed bank
Interaction with other organisms	Conservation
Distribution	

We plan to proceed by the following steps:

- Literature review and preparation of draft listings that will be made available progressively to ecologists and botanists who can assist by filling gaps in the information. A database will be developed to record both data and the source from which each item has been obtained.

- Publication in *Cunninghamia* of the work in about ten parts, each covering about 250 species. If feasible, parts will be produced annually. Such publication will again assist in obtaining information from other sources, as well as making the data accessible as it becomes available.

Part 1 Ferns, Fern-allies, Cycads and Conifers

Part 2 Acanthaceae to Brassicaceae

Part 3 Cabombaceae to Eupomatiaceae

Part 4 Fabaceae

Part 5 Flacourtiaceae to Myrsinaceae

Part 6 Myrtaceae

Part 7 Nyctaginaceae to Rubiaceae

Part 8 Rutaceae to Zygophyllaceae

Parts 9 & 10 Monocotyledons

- Eventually a comprehensive publication covering all groups is planned. This will update the information given in the earlier publication of sections of the work.

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