A. PROPOSAL

Inclusion in Appendix I of the New Zealand Wood-rose parasite, *Dactylanthus taylorii*.

B. PROPONENT

New Zealand.

C. SUPPORTING STATEMENT

1. Taxonomy

11. Class: Dicotyledonae
Balanophoriflorae

12. Order: Balanophorales

13. Family: Balanophoraceae

14. Species: *Dactylanthus taylorii* Hooker

15. Common Names: English:
French:
Spanish:

16. Code Numbers:

2. Biological Data

21. Distribution: The material for this submission has been prepared on the advice of Ecroyd (1991 and pers.comm.). The wood-rose is restricted to the North Island of New Zealand, principally in the area between Cape Egmont and Mt Pirongia, the central North Island, the East Cape region and Little Barrier Island (see map).

Information on the past distribution of the plant can be found in the records of early botanists and bushmen who explored New Zealand forests during the 19th and early 20th centuries. For example, Cheesman stated in 1906, "I have seen a large number of specimens of this singular plant". Today, few botanists have ever seen it. In the Rotorua Lakes Ecological district, for example, it was known from at least three localities 50 years ago, whereas today only a single plant is known from one of these localities. Other examples indicate a drastic decline in range. Despite early records of *Dactylanthus* from at least five localities North of Auckland, the only evidence of its continued existence there is from pollen found in bat guano in one forest in 1975. On the Coromandel Peninsula there are old reports from four sites but no confirmed records over the last 40 years. On the East coast there are old records from eight localities, but only three recent records. Three old records exist of *Dactylanthus* in the North Island South of Wanganui, while the only substantiated record from the South Island is of pollen which may be at least 100 years old.

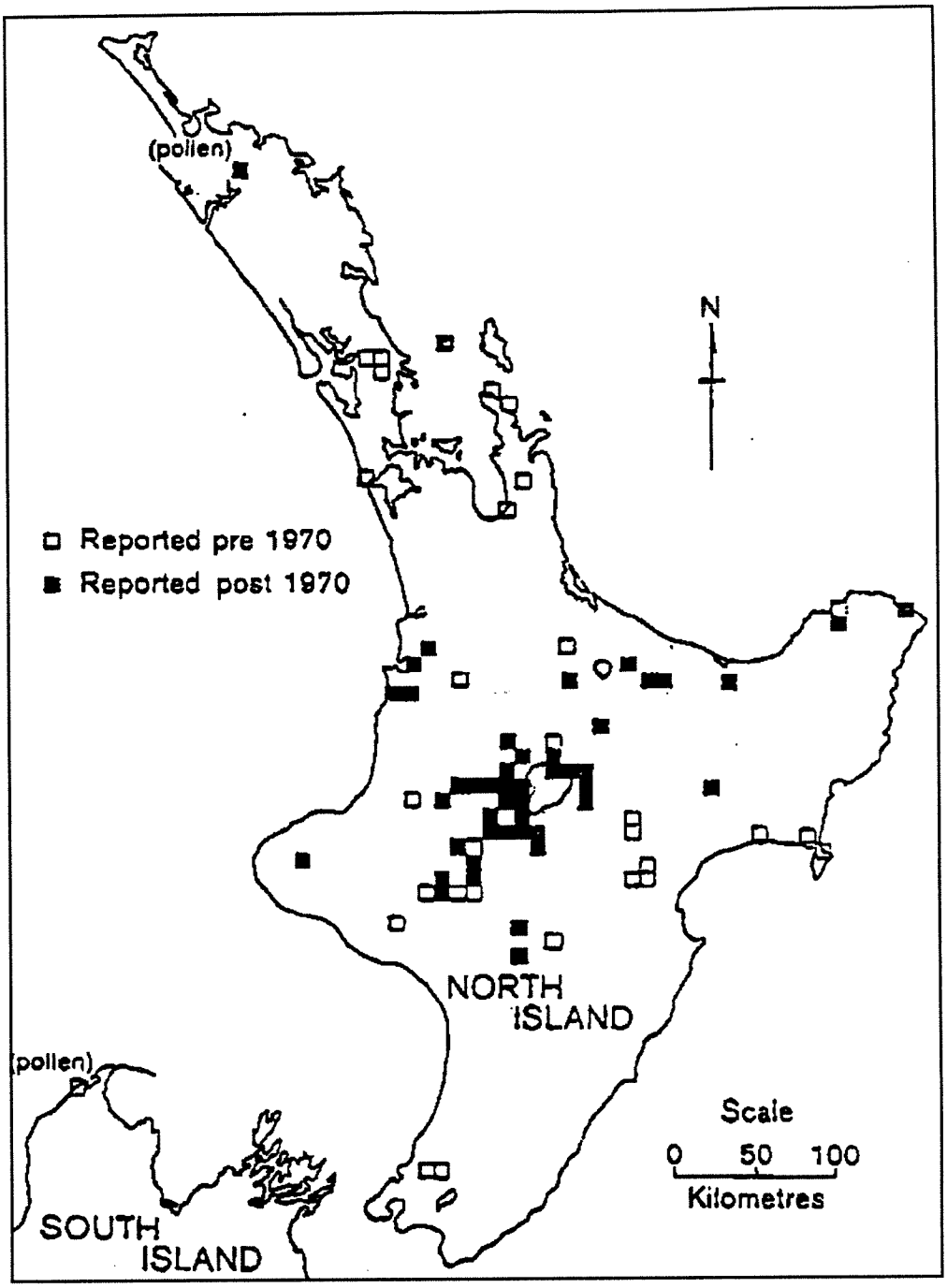

Figure 1. Distribution of *Dactylanthus taylorii* in New Zealand.

22. Population: *Dactylanthus taylorii* often grows completely buried and in clumps consisting of many separate plants fused together. Accurate population counts are therefore impossible without damaging or destroying the plants.

The draft *Dactylanthus taylorii* Recovery Plan (NZ Dept of Conservation - in prep.) notes that the distribution of the species has shrunk this century and is estimated at only a few thousand live plants. At many sites a high percentage of the plants are dead. Collection for sale and browsing of flowers by the brush-tailed possum (*Trichosurus vulpecula*) are further depleting remaining populations.

On the Mamaku Plateau, Rotorua District, a population which has been studied intensively over the last three years consists of approximately 400 plants. Two other populations of similar size are known to exist, at Pureora and near Taupo in the central North Island Volcanic plateau. At several sites visited recently, a high percentage of the plants was dead.

The species is currently listed as vulnerable in the New Zealand threatened plants list prepared according to the IUCN criteria (NZ Threatened Plants Committee 1993). In view of the latest information on status, however, the current review of New Zealand plant species is expected to result in an upgrade of *Dactylanthus* to endangered.

23. Habitat: While deforestation and logging have resulted in dramatic decline in the extent of forest habitat in the central North Island over the last 100 years, that decline has substantially halted, and there are still reserved areas theoretically adequate for the long-term survival of the species.

3. Trade Data

31. National Utilization: In the past, large quantities of *Dactylanthus* have been dug up by collectors of the wood-rose, the intricate formation which the parasite induces in the roots of the host plant. Collectors are still active, as evidenced by the removal of marked plants from study sites near Taupo (Ecroyd 1991), and Pureora and Mamaku in 1994 (C. Ecroyd pers. comm.).

Wood-roses formed by *Dactylanthus* plants are currently on sale in tourist and craft shops in New Zealand, particularly in the Rotorua, Taupo and East Cape areas, where specimens sell for around $NZ 50.00 each.

32. Legal International Trade: While there is no evidence of an international "wholesale" trade in wood-roses, there is little doubt that the major market in New Zealand comprises overseas travellers.

33. Illegal Trade: Currently, trade is legal unless material is taken from legally protected land. Such land encompasses most of the species' current range.

34. Potential Trade Threats

Continued trade at current rates represents a severe threat to the continued existence of this species.

341. Live Specimens: There is no trade in live specimens.

342. Parts and Derivatives: As outlined above, the wood-rose is part of the root of a host tree which has been altered by the presence of the *Dactylanthus* parasite. Trade is exclusively in this derivative, which consists of host-plant tissue and not *Dactylanthus* itself. The *Dactylanthus* plant is destroyed in the process of obtaining the wood-rose, however.

4. Protection Status

41. National: Almost all of New Zealand's native plant species are protected under the Native Plants Protection Act 1934. In reality, this legislation provides little protection for plants, as collection is legal where the permission of the landowner is obtained. *Dactylanthus* is protected by regulations prohibiting the taking of plant material from many of its habitats.

42. International: Unprotected.

43. Additional Protection Needs: While much of the remaining habitat is now protected, there is a need for legal protection or regulation domestically. There is a further important factor affecting the survival of the species, the introduced brush-tailed possum, *Trichosurus vulpecula*.

    Observations of *Dactylanthus taylorii* made at eleven sites over the last three years has shown evidence of seed being set at only one site. Possums are browsing the flowers and thereby preventing reproduction of most plants. In addition to this browsing damage, possums damage the host roots with their sharp claws in their efforts to dig out the succulent flowering shoots of *Dactylanthus.* Unchecked, possums could cause the extinction of the species at most mainland sites. Possum control is underway in a number of localities, but a long-term solution to this problem is currently elusive. Enclosures used to protect the plants from possums have assisted wood-rose collectors in locating plants.

5. Information on Similar Species

Wood-roses formed by species closely related to *Dactylanthus* have recently been brought into New Zealand. They can sometimes be distinguished by the presence of ornate carvings, but otherwise may be distinguished under microscopic examination.

6. Comments from Countries of Origin

NA.

7. Additional Remarks

Though the wood-roses of concern comprise host tissue of common tree or shrub species, they are nevertheless products of *Dactylanthus*, in the same way that the inanimate mollusc shell is a product of the animal inside it. The Convention, as written, should therefore be able to accommodate the listing of this species.

8. References

Ecroyd, C. 1991. Report on *Dactylanthus taylorii*. Unpublished report to NZ Department of Conservation. Forest Research Institute. Rotorua, NZ. 4pp.

New Zealand Department of Conservation. In prep. Draft Recovery Plan for *Dactylanthus taylorii.* Wellington.