

## Mapping the distribution of weeds and ferals in the Wet Tropics Bioregion

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**Summary** The Wet Tropics Bioregion (*sensu* Environment Australia 2005) of Australia contains a range of wet forest habitats, plus drier woodland communities in the coastal lowlands and to the west of the main rain forest block. To date, the region is known to host more than 500 naturalised exotic plant species (Werren 2001) and at least 28 species of feral vertebrates (Harrison and Congdon 2002). Many of these species, particularly amongst the plants, are likely to be causing little harm to the natural environment, and do not pose a significant threat. A smaller number are serious pests causing major environmental, economic or cultural damage. A third group are so-called 'sleeper' or 'sneaker' species, which apparently are doing little harm but monitoring may indicate that these are in the early phases of exponential growth and are potentially serious pests of the future.

Our project is concerned with documenting the current status of the Wet Tropics environmental assets and assessing current and future trends in environmental health. We are concerned that a serious issue facing the monitoring of the weed and feral impact and spread within the Bioregion is the lack of a coherent synthesis of the data held between different agencies. This has arisen because different statutory bodies and agencies hold different datasets on different combinations of species, and these data are usually constrained by the priorities or responsibilities of the data holders. Federal, State and regional lists and legislation also mean that the responsibility for control lies with different agencies, with some species having no legislative status and therefore little attention paid to them.

Consequently we are attempting to map the distribution of weeds and ferals across the Bioregion in order (i) to highlight clusters of pest species or potential pest species, (ii) to relate the distribution of weeds and ferals to environmental and socio-economic variables, and (iii) to investigate the gaps in understanding of distributions which may represent significant shortcomings in current monitoring arrangements.

Given the number of species concerned, we are not yet able to map all species, so have instead selected a stratified sample to include identified pest species, some species which we consider to be of negligible impact or concern, and some species which we suspect to be sleeper or sneaker species based on their

behaviour in other similar environmental contexts (for example, using data from Randall 2007). Weed and feral distribution data is being collated from Federal and State agencies, from local councils and NRM bodies, and from ancillary data sets collected for different purposes but which provide high resolution distribution data for particular species. These ancillary datasets include survey work funded by the CRC for Australian Weed Management, CSIRO and the Australian Government's Marine and Tropical Sciences Research Facility (MTSRF).

This work is at an early stage, but has already identified issues around poor reporting of species with low or no legislative status, species which have now become so common or widespread that they no longer warrant mention, and inconsistent monitoring approaches among stakeholders. Presentation to managers of results collated from various sources is raising awareness of distributional patterns across jurisdictional boundaries, and highlighting mismatched control effort in some instances. Continued mapping should enhance our ability to support monitoring and control efforts.

**Keywords** Weed, feral, distribution, mapping.

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