

**MARRARA RAAF
FACILITIES:
ASSESSMENT
OF PRELIMINARY
ENVIRONMENT REPORT**



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ENVIRONMENT UNIT
CONSERVATION COMMISSION OF THE NORTHERN TERRITORY
DARWIN N.T.

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1.0 SUMMARY

This proposal, by the Department of Lands, concerns the relocation of the RAAF ordnance storage depot from Frances Bay to an area adjacent to Marrara swamp. If implemented, the proposal will result in a degree of rationalization of the RAAF presence in Darwin and the release of 440 ha of land, situated between the Winnellie industrial area and Darwin harbour, for alternative use.

The subsequent use of the released land is beyond the scope of this report, and may require separate assessment.

The ordnance dump relocation has the potential for two main environmental impacts. The first of these is the effect of the proposal on the water quality of Rapid Creek, and it is the Conservation Commission's opinion that all development in the vicinity of the creek and its headwaters at Marrara Swamp should be controlled as far as possible to minimise potential stream degradation. Recommendations have been framed to reflect this stance (see recommendations ii, iii and vi, Section 7.0 of this report).

The second possible effect relates to the proximity of the proposed new civil facilities at Darwin airport in the context of safety distances for the ordnances (in the event of explosion). The Industrial Safety Division, Dangerous Goods Branch, of the Department of Mines and Energy and the Department of Health have expressed reservations on the coverage of safety distances; the Conservation Commission considers that clarification is required on this issue (see recommendation iv, Section 7.0).

Overall, however, it is considered that provided the question of safety distances is satisfactorily resolved and that the other recommendations are implemented in full, the project's environmental impact will be minimal.

Due to the direct involvement of a Commonwealth Department (Defence), this proposal is also subject to assessment by the Department of Home Affairs and Environment as a Notice of Intention under the *Environment Protection (Impact of Proposals) Act*.

Environmental clearance of this proposal will not necessarily be followed by its immediate implementation as this is dependent on the result the Department of Defence's Tindal proposal and subsequent decisions on RAAF deployment in the N.T.

2.0 INTRODUCTION

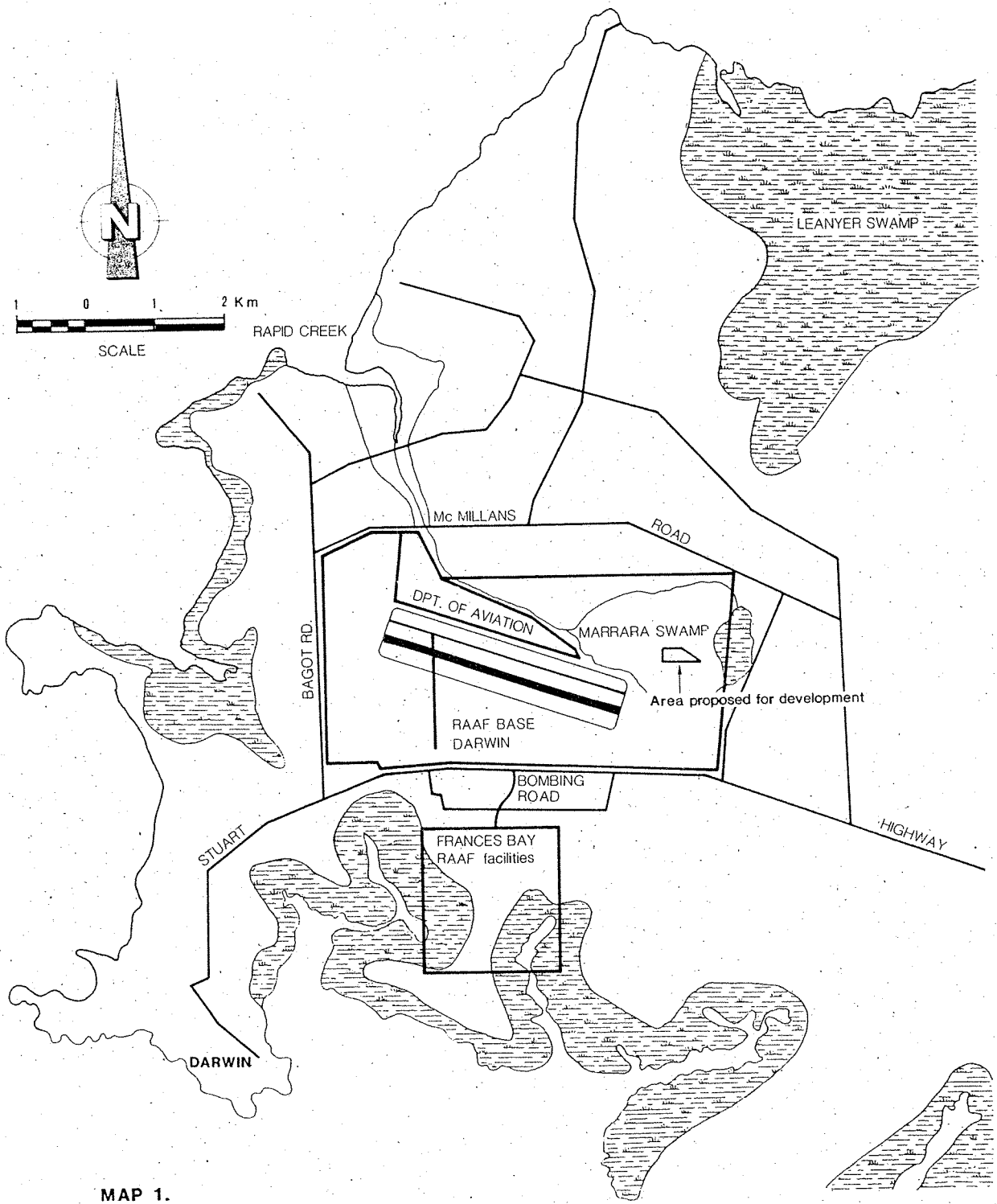
The Department of Lands considers that the efficiency of inner urban area utilization in Darwin would be enhanced in part by the consolidation of RAAF facilities; particularly, by relocating the RAAF munition's dump from Frances Bay to Marrara Swamp (Map 1). This would theoretically promote greater efficiency for RAAF operations and would release the under-utilized Frances Bay site for urban development.

The Department of Lands, who has initiated this proposal, is the proponent for assessment purposes, and has produced a Preliminary Environmental Report (PER) as suggested by the Administrative Procedures of the *Environmental Assessment Act*. This equates with the Notice of Intention required by the Commonwealth *Environment Protection (Impact of Proposals) Act*. This PER has been subject to joint Territory and Commonwealth assessment.

Arrangements for joint assessment have involved the provision by the proponent of PER copies to the Conservation Commission and the Department of Home Affairs on Environment (DHAE), who then invited comment from appropriate Territory and Commonwealth authorities. These comments have been incorporated into this (for Territory authorities) and the DHAE's (for Commonwealth authorities) assessment report.

This report contains a brief description of the proposal, a summary of invited submissions, a discussion of potential environmental impacts and a series of recommendations designed to ameliorate these impacts.

LOCALITY PLAN



MAP 1.

3.0 THE PROPOSAL

It is proposed by the Department of Lands that the Department of Defence rationalise their Darwin presence by relocating the facilities at the 440 ha Frances Bay site to a site in Marrara Swamp.

The Department of Defence is currently awaiting a Commonwealth Government decision on its proposal to develop the Tindal base at Katherine into a fully operational field, and will not therefore be in a position to respond to Lands' initiative until that decision is made, probably in mid 1984. At that time, the future scale and form of RAAF's Darwin presence will be determined.

Existing facilities at Frances Bay include earth covered storage magazines, guard dog kennels and exercise yards, administration buildings, security fencing, access roads and a range of engineering services. All ordnance movement from Frances Bay to RAAF Base Darwin involves passage through the Winnellie industrial area and across the Stuart Highway, the main north-south artery.

In the PER, the project is defined as a proposal 'to construct an ordnance storage compound, guard dog complex and administration building on the high ground encircled by Marrara Swamp...., a sealed access road, bridging the southern arm of the swamp, would provide access to these facilities from the existing on-base road network. The normal range of engineering services (water, sewerage, electricity and communications) would be reticulated to the facilities from the existing on-base services network'.

The ordnance storage compound as proposed would be 220m long by 125m wide, floodlit, surrounded by a 1.8m high manproof fence and incorporating lightning protection facilities.

Guard dogs would be catered for by housing in individual kennels with washdown facilities and access to an exercise yard. Provision is made for isolation kennels and an incinerator for waste product disposal.

An access road would connect the administration building, guard dog complex and ordnance storage depot to the existing road network near the eastern end of the main runway.

Sewage from the dog compound that is not incinerated plus that from the administration building is proposed to be removed to a septic tank with ultimate disposal via soakage trenches.

4.0 EXISTING ENVIRONMENT

The proposed development is adjacent to Marrara Swamp which forms a headwater for Rapid Creek. In terms of the existing natural environment, Marrara Swamp and the proposal's effect on it are critical. An attempt has therefore been made by the proponents to define the existing environment of the swamp and its environs rather than concentrating strictly on the confines of the proposed site.

The region has been characterised in terms of its topography, soils, flora, fauna, hydrology, land-use and sites of cultural and heritage significance on the basis of available information; no on-site surveys were conducted apart from a routine site inspection, however studies prepared for the downstream Rapid Creek recreational project, data from the water quality monitoring programme of the Department of Transport and Works and the results of mosquito breeding surveys conducted by the Department of Health, have been used in the current study.

5.0 REVIEW OF SUBMISSION

Submissions on the proposal were made by relevant Government bodies and synopses of their comments are presented below:

- 5.1 Aboriginal Sacred Sites Authority considered that the proposal would have no significant impact upon Aboriginal contemporary activities or customary concerns.
- 5.2 Department of Mines and Energy (Industrial Safety Division) expressed concern over a lack of compliance with the safety distances as required under AS 2187, and the fact that a significant proportion of the proposed new Darwin civil airport facilities will fall within required safety distances.
- 5.3 Department of Community Development considered that the report adequately covered environmental aspects and was fully supportive of the proposal.
- 5.4 Department of Transport and Works (Water Division) noted that current Rapid Creek water quality monitoring programmes would need to be adjusted to take account of the proposed development, and considered that the proposed sewage collection and treatment method (conventional septic tank and absorption trench) would not be appropriate and that an alternative design, such as a transpiration mound may have to be considered.
- 5.5 Darwin City Council expressed reservations over the proposed sewage treatment system, highlighting the recreational importance of Rapid Creek; DCC also commented on:
 - (i) the need to preserve Rapid Creek surface flow and aquifer feed integrity, and
 - (ii) the need for an assurance by Defence that future expansion of RAAF facilities in the Marrara swamp area be defined and limited.DCC also recommended four local interest groups who in its opinion, should have the opportunity to comment on the proposal (this information passed on to the proponent).

- 5.6 Northern Territory Museum of Arts and Sciences considered the report had some shortcomings in terms of the flora and fauna baseline data and considered that the effect of the development on natural mosquito control in the area (through aquatic bugs, dragonfly larvae and frogs etc) had not been considered. The Museum was however generally satisfied with the proposal provided the archaeological survey promised in sub-section 4.9 of the report is carried out.
- 5.7 The Department of Health was generally satisfied with the Report although the question of safety distances and the proximity of urban development was raised, as was the advisability of using absorption trenches in the proposed sewage treatment works. The Department also recommended that the proposed mosquito control works take account of fish migrations into Marrara swamp and that water flow around access roads and tracks be maintained and ponding eliminated. Corrections to mosquito taxonomy were also provided (this information passed on to the proponent).

6.0 ASSESSMENT OF ENVIRONMENTAL IMPACTS

The PER has examined impacts with respect to, soil erosion, vegetation loss, fauna, mosquito breeding, hydrology, public safety, base operations, land use and culture and heritage.

In summary, the proposal has to deal with two main areas of potential impact - public safety, and the integrity of the Rapid Creek as a safe freshwater recreation area.

Rapid Creek depends largely on Marrara Swamp and the underlying aquifers for its freshwater recharge in the dry season. It is also accessed by some suburban stormwater and has shown a degree of contamination from this source already. The Creek is currently an important, comparatively safe aquatic recreational environment (used for swimming, canoeing, fishing, etc.) in close proximity to suburban development and the proponent, recognising this, has attempted to avoid compromising its largely pristine status.

Soil conservation techniques such as minimal disturbance, suitable batter slopes, revegetation of disturbed surfaces and construction during the dry season will be employed. Approximately 5 ha of open forest will be cleared for the proposal; the effect of this on the Marrara water regime is not clear although the proponent predicts that this will be negligible. The high conservation value closed monsoon forest in the vicinity will not be affected by the proposal.

The impact of the proposal on public safety has two aspects; firstly the cessation of ordnance movement by public road through the Winnellie industrial region and across the Stuart Highway is a tangible benefit in that the risk of detonation from a road accident will no longer exist.

The second aspect relates to the effect of the proposal on the planned new civil terminal facilities; while the PER discusses NATO safety principles in some length, the crucial statement in this segment is 'as a consequence of security requirements it is not possible to quantify the effect of detonation of explosives within the compound'

and in fact the effect of a detonation cannot be accurately predicted outside the compound either due to the same security requirements, i.e. the type of ordnance to be stored is not discussed; this aspect is discussed further in Section 7.0.

7.0 RECOMMENDATIONS

The proposal's environmental impact need not be significant - with the possible exception of safety distance issues (see 3 below) - in terms of the overall benefits that will accrue. The impacts that have some potential to impinge noticeably on the ambient environment can be largely ameliorated and it is the recommendation of this Commission that:

1. in view of the fact that the respondents and this Commission were satisfied in general with the depth of coverage presented by the proponents, an EIS should not be required;
2. the project receive environmental clearance, subject to the satisfactory resolution of 3 below; provided the proponent undertakes to adhere to recommendations 2(a)-(e).
 - (a) in view of the high recreational value of the lower reaches of Rapid Creek, the proponents be requested to ensure the installation of the best possible sewage treatment techniques; this to be done to the satisfaction of Water Division, Department of Transport and Works who have suggested a transpiration mound;
 - (b) the Department of Lands draw the attention of the Department of Defence to the fact that further development in the vicinity of the proposal will be discouraged, or subject to the strictest environmental and safety standards, in order to maintain the integrity of Rapid Creek as a relatively safe fresh-water recreational area;
 - (c) the Northern Territory Museum of Arts and Sciences be invited by the proponent to participate in the archaeological survey proposed in Sub-section 4.9 of the PER;
 - (d) the proponents liaise with the Land Conservation Unit of this Commission over the implementation of soil erosion control techniques discussed in Sub-section 4.1 of the PER; and
 - (e) (i) the proponent liaise directly with Water Division, Department of Transport and Works, with respect to the

construction schedule so that the Division's water monitoring programme may be suitably modified; and

- (ii) any change to the existing water quality considered by Water Division to be having a degrading effect on Rapid Creek as a recreational area and that is attributable to the development or conduct of this proposal be the subject of liaison between this Commission, the proponent and Water Division until the Territory authorities are satisfied that the problem has been ameliorated to an acceptable extent.

3. the project not receive environmental clearance unless and until the Industrial Safety Division of the Department of Mines and Energy can inform this Commission that the issue of safety distances and the proximity of civilian activities to the proposed munitions dump has been resolved to its satisfaction.