

**CONSOLIDATING
THE
GREATER BLUE MOUNTAINS
WORLD HERITAGE AREA**

**INHOLDING ACQUISITION AND
PEST SPECIES MANAGEMENT**

**A Report to
Blue Mountains Conservation Society Inc**

by Ian Brown, September 2001

1.0 INTRODUCTION

The reduction of privately-owned inholdings within reserved areas and the effective control of introduced species are management programmes of particular importance to the integrity of the Greater Blue Mountains World Heritage Area (GBMWhA).

These two priorities are linked, in that inholdings can be a source for the introduction or maintenance of pest species. Also, a significant proportion of pest species funding is applied to problems arising from former land uses.

The NSW National Parks and Wildlife Service, as a matter of policy, only acquires property by agreement with the owner. Many owners are willing to sell, but voluntary inholding acquisition is often inhibited by a lack of readily available funds for purchase.

Inholding acquisition/management and introduced species management receive inadequate finance and could benefit substantially from additional Commonwealth funding.

The aim of this report is to provide an estimate of the funding required for effective implementation of these two important programmes. Specifically, the brief from the Blue Mountains Conservation Society Inc includes the following objectives:

- To identify priority areas of management and conservation significance to be acquired by NPWS to consolidate the Greater Blue Mountains World Heritage Area. The focus should be on privately held lands with the emphasis on inholdings plus any other boundary acquisitions with outstanding conservation and/or management importance.
- To estimate the cost of acquisition of these properties and to explain the basis of that estimate.
- To estimate the management costs associated with these acquisitions (in particular feral species control).
- To estimate the cost of feral species control (flora and fauna) required to appropriately manage the existing Park areas, ie. the cost of implementing the NPWS feral species plan and a comparison with the current level of expenditure.
- To explain the importance of land acquisitions for the World Heritage Area and for adequate funding for management.

2.0 METHODOLOGY

The preparation of this report has relied upon the knowledge and experience of the author in local geography, park management and inholding issues. Research and compilation has involved the following steps:

- Identification of all inholdings within the GBMWhA, their overall condition and vehicle access using park boundary maps and topographic maps.
- Consultation with knowledgeable NPWS staff to refine inholding data and obtain up to date information on land condition, improvements and management issues.
- Classification of each inholding into five broad acquisition categories.
- Estimate of first-year management costs for each inholding based upon known management issues and land condition.
- Consultation with staff of the Land Information and Property Branch (Valuer-Generals) and other knowledgeable persons to estimate purchase costs for each inholding.
- Summation of total acquisition and first-year management costs for all inholdings in the top three acquisition categories.
- Consultation with NPWS to determine current budgets for introduced species control within the GBMWhA and the budget required for effective management.

3.0 LIMITATIONS

3.1 Time Constraints

The preparation of this report was limited to approximately one week's work, with a deadline of 13 September 2001. In actuality more work was required to achieve a reasonable standard of information, and the report was not completed until a week after the deadline. Within this timeframe it was still not possible to consult with all relevant informants, so some parts of the GBMWhA are covered with greater accuracy than others.

3.2 Scope of Research

Research was limited to inholdings because time did not allow specific investigation of the numerous potential perimeter acquisitions. High conservation value, as with the presence of rare species or poorly conserved communities, is rarely a significant factor in determining acquisition priority within the mostly well-conserved environments of the GBMWhA. The presence of threatening land uses and current management difficulties are more common issues.

3.3 Accuracy

Without full access to the files of NPWS and other agencies, combined with detailed field assessment, completely accurate information on each inholding is not achievable. Reliance has been placed upon map interpretation and informant information with consequent risk of errors.

Existing park boundary maps are not 100% accurate, and the status of properties is constantly changing as NPWS acquires lands. Some inholdings included in this report may have already been acquired by NPWS, and some existing inholdings may have been overlooked. The number of such discrepancies would be below 5% of the total data set.

Although a level of inaccuracy is inherent in this report, it is not significant enough to affect the overall conclusions.

3.3 Cost Estimates

The estimate of inholding purchase prices is fraught with difficulty, including the following:

- Every property is individual with regard to the value of its land, level of improvement, other assets and qualities, access, size and market appeal – so broad per hectare prices may be misleading.
- The size of the market varies enormously between properties and may be constrained by planning restrictions, NPWS interest and other factors.
- NPWS may be the only interested buyer for some properties.
- Smaller inholdings have a “retreat value” in the market independent of other land use values, whereas larger properties with agricultural capacity are in the normal rural market. Some properties may have perceived tourist potential which places them in another market.
- Even a professional valuation is not always a reliable guide to the eventual sale price, eg. NPWS may at times pay a premium over market value because of the management importance of securing a property and preventing its sale to a private buyer.

Nevertheless, these complexities can be expected to average out over a large number of properties, and the total figure estimated in this report should be a reasonable guide.

4.0 ACKNOWLEDGEMENTS

The assistance of NPWS staff from Blue Mountains, Central Coast and Sydney South Regions, and staff of the Valuer-Generals is gratefully acknowledged.

5.0 INHOLDINGS

5.1 Importance of the Acquisition and Effective Management of Inholdings

Inholdings (sometimes called enclaves) are privately-owned parcels of land completely surrounded by reserved public land of the GBMWhA. They pose a general and long-term threat to the natural integrity of the WHA because they are not subject to the same ecologically-based, protective management regime. They are managed for a range of objectives, which are often not consistent with nature conservation.

By definition, ground access to inholdings is through the adjoining park. This may involve public access roads or management access trails. The natural vegetation/habitat on inholdings may be

modified or completely removed. Land uses such as farms, quarries, orchards and residential development can occur. Land uses may be well established or potential, and local planning may or may not provide adequate controls to protect the adjoining reserve. Non-conservation land uses on inholdings can impact on the surrounding reserves in the following ways:

- removal or modification of natural habitat within the inholding
- fragmentation of vegetation cover/habitat and disruption of faunal movements
- harbour and escape of weeds, feral animals and domestic animals
- catchment impacts of pollutants and erosion
- visual impacts from clearing and structures
- clearing on-reserve for fencelines
- fire management for property protection rather than ecological objectives
- impact of access roads through the reserve and uncontrolled access to the private land
- inappropriate and damaging recreation
- illegal activities including hunting and cultivation of prohibited crops

Some of these impacts can result in considerable on-park land management effort being required. Many inholdings also require significant ongoing administration by NPWS, such as:

- provision of legal access to owners, formal agreements, etc
- continued management of road access through the park that would otherwise be unnecessary
- ongoing input to local planning issues over private land use
- liaison with owners
- monitoring of activities
- management of fencing, fire protection, etc

The following real examples illustrate some of these issues:

- An unfenced inholding in a remote wilderness location that is used to run cattle. The cattle roam widely within the adjoining park.
- An inholding accessed by a remote management trail requires special arrangements for the locked gate and a formal agreement for access and road maintenance.
- A large, well-established grazing property on an inholding which impacts on downstream water quality.
- An inholding with a gravel quarry.
- An inholding with no effective management by the owner that hosts a major blackberry infestation and intensive use by recreational vehicles.
- A major mushroom farm proposed for an inholding.
- An inholding owner was not satisfied with the vehicle access available and bulldozed a new road through the park (illegally).
- Inholding owners suspected of lighting bush fires within the park.
- The clearing of vegetation beyond the boundary of an inholding into the park.
- A residential inholding that requires intensive fire management for property protection.
- A remote wilderness inholding that is regularly accessed by helicopter.
- Inholding owners/residents who actively interfere with on-park feral animal management programmes.

-
- Inholdings being used for illegal activities such as the cultivation of prohibited plants and hunting on park.
 - An inholding in a remote area currently for sale for a very inflated price because of a perceived potential for helicopter tourism.
 - Unfenced inholdings where domestic species such as goats and donkeys have been released to roam freely into the park.

Inholdings range from very large settled areas with multiple owners and long-established, highly-modified environments, to small bush blocks in isolated areas with no vehicle access and an intact natural environment. Owners vary from very pro-conservation to actively obstructive of conservation effort. Even inholdings in natural condition with sympathetic owners pose a long-term threat of changed ownership and land use.

Within the GBMWHA, a number of inholdings occupy fertile pockets of basalt and alluvium within the sandstone landscape. These areas were alienated historically because of their superior pastoral potential, and are valuable additions to the national park because of their relatively high productivity and biota that is often different to the sandstone surrounds.

Acquisition and addition to the reserve is often only the first step in eliminating environmental threats from inholdings. Depending on the extent of modification, active management may be required initially or for a number of years – to control established pest species, remove fences and unwanted structures, manage historic features, repair erosion, rehabilitate roads, manage access and recreation, revegetate, etc. In some cases management costs may exceed the price of acquisition. Although a process exists to fund acquisition management from the NSW Treasury, allocations are often insufficient.

During the assessment of the Blue Mountains World Heritage nomination, the IUCN advisers to the World Heritage Committee regarded the extent of “enclaves” within the proposed area as a significant threat to the long-term protection of the area. This was one reason for the IUCN’s negative recommendation.

5.2 Acquisition Categories

Each inholding has been classified into one of the following five categories. The priority for acquisition is highest for Category 1 and lowest for Category 5.

Category 1 – remote and threatening

- Current or potential land use damaging to NP and WH values
- Within wilderness or core areas of NPs
- Vehicle access, if any, is long and difficult
- Environment is substantially intact or readily capable of restoration
- Minimal or no capital improvement – eg. no substantial buildings
- May or may not have significant conservation values
- Purchase is practically and financially achievable
- Rehabilitation costs are manageable

Category 2 – intact and harmless but cheap

- No current threatening land use

-
- May be located in core or peripheral area of NPs
 - Vehicle access, if any, is long and difficult
 - Environment is substantially intact
 - Minimal or no capital improvement – eg. no substantial buildings
 - May or may not have significant conservation values
 - Purchase achievable at low cost
 - Minimal or no rehabilitation costs

Category 3 – *modified but desirable*

- Low current or potential threat from land use
- Some environmental modification which is readily capable of restoration
- May be located in core or peripheral area of NPs
- Vehicle access irrelevant
- Minimal or no capital improvement – eg. no substantial buildings
- May or may not have significant conservation values
- Purchase achievable at mid-range cost
- Low to significant rehabilitation costs

Category 4 – *highly modified*

- Environment is substantially modified and therefore of low conservation value
- May be located in core or peripheral area of NPs
- Vehicle access irrelevant
- Minimal or no capital improvements – eg. no substantial buildings
- Purchase mid-range to costly
- May have major weed problems or other expensive management requirements

Category 5 – *capital improved and expensive*

- Current land use inimical to NP status
- Current residential occupation in most cases
- Generally near periphery of NPs
- Vehicle access generally good
- Environment may be substantially modified and not readily capable of restoration
- Major capital improvements – eg. substantial building(s)
- Purchase problematic and/or prohibitively expensive
- Major rehabilitation costs if acquired

For the purposes of this report only categories 1 to 3 have been included in the recommended acquisitions budget. Inholdings in these categories are either substantially intact or readily capable of restoration, and have nil or minor capital improvements.

The environmental condition of Categories 4 and 5 may be highly modified and capital improvements are significant. Some have current residential occupation. These properties present major financial difficulties for both acquisition and management and cannot be considered as priorities in the short to medium term.

Other inholding areas present large, well-established complexes of private properties with a value of many millions of dollars. Mount Wilson-Mount Irvine is one example. These complexes are not

realistic additions to the park system even in the long term and must be managed around for the foreseeable future. They have been excluded from consideration in this report.

5.3 Findings

The GBMWH is made up of Wollemi, Yengo, Gardens of Stone, Blue Mountains, Kanangra-Boyd, Nattai and Thirlmere Lakes National Parks and Jenolan Caves Karst Conservation Reserve – a total area of just over one million hectares. Within this area 122 discrete inholdings have been identified for consideration with a total area of 15,258 hectares.

Some of these include a number of separate holdings (ie. more than one owner). Every reserve except Thirlmere Lakes NP has inholdings. The greatest concentration occurs in the far north and south-eastern corner of Wollemi NP, in Yengo NP and in the far south of Blue Mountains NP. Full details of each inholding are given in the Appendix.

Table 1 provides a summary of the inholdings within each reserve of the GBMWH. Table 2 shows the total estimated commitment for acquisition of all inholdings within Categories 1 to 3. Table 3 summarises the acquisition proposals.

Table 1: Private inholdings in the GBMWH

Reserve	No. Inholdings	Total Area
Wollemi NP	54	5018 hectares
Yengo NP	35	7185 hectares
Gardens of Stone NP	2	161 hectares
Blue Mountains NP	22	2170 hectares
Kanangra-Boyd NP/Jenolan Caves KCR	4	234 hectares
Nattai NP	5	490 hectares
TOTAL	122	15,258 hectares

Note: Properties located between two reserves have been allocated to one or the other.

Table 2: Recommended Acquisitions

	Wollemi	Yengo	GOSNP	BMNP	KB/JC	Nattai	TOTAL
Cat 1							
Number	7	2	0	9	3	1	22
Area	459 ha	940 ha	nil	1155 ha	51 ha	400 ha	2972 ha
Cost	\$275,000	\$620,000	nil	\$670,000	\$140,000	\$300,000	\$2,005,000
Mgt Cost	\$40,000	\$50,000	nil	\$70,000	\$30,000	\$10,000	\$200,000
Cat 2							
Number	14	24	0	8	0	2	48
Area	846 ha	2460 ha	nil	717 ha	nil	24 ha	4047 ha
Cost	\$431,000	\$1,520,000	nil	\$415,000	nil	\$40,000	\$2,406,000
Mgt Cost	\$15,000	\$40,000	nil	\$20,000	nil	\$10,000	\$85,000
Cat 3							
Number	21	6	2	5	1	2	37
Area	3349 ha	1198 ha	161 ha	298 ha	183 ha	66 ha	5255 ha
Cost	\$2,403,000	\$830,000	\$200,000	\$760,000	\$150,000	\$210,000	\$4,553,000
Mgt Cost	\$290,000	\$55,000	\$15,000	\$85,000	\$10,000	\$25,000	\$480,000

Table 3: Acquisition Cost and Area Summary

Category	Total Area	Total Purchase Cost	Total M'ment Cost
Category 1	2972 ha	\$ 2,005,000	\$ 200,000
Category 2	4047 ha	\$ 2,406,000	\$ 85,000
Category 3	5255 ha	\$ 4,553,000	\$ 480,000
TOTAL	12274 ha	\$ 8, 964,000	\$ 765,000

Pest species management, where required, will require ongoing but reducing support beyond the estimated first year management costs. It is recommended that funding of at least \$2 million be sought for inholding management from the Commonwealth, bringing the total requirement to a minimum of \$11 million. At least \$12 million is recommended.

6.0 PEST SPECIES MANAGEMENT

The GBMWHA has significant and long-term introduced species management issues. Amongst the largest programmes are urban weeds in the central Blue Mountains NP, blackberries in many precincts and feral pigs. All such programmes require a steady and sustained effort and must be maintained at a minimum level to avoid losing past gains.

Table 4 shows the approximate existing annual (current financial year 2001/2) and recommended introduced species management budgets for the GBMWHA. Existing State funding varies from year to year and may be supplemented from time to time with special projects funding or grants.

Table 4: Introduced species management budgets for the GBMWHA

NPWS Region	Approx. Annual State Budget	Recommended Budget
Central Coast	\$50,000	\$120,000
Blue Mountains	\$150,000	\$390,000
Sydney South	\$16,000	\$100,000
TOTAL	\$216,000	\$610,000

It is therefore recommended that an allocation of at least \$400,000 per year be sought from the Commonwealth.

7.0 CONCLUSIONS

It is concluded that the following amounts should be sought from the Commonwealth to supplement existing State funding available to the GBMWHA:

- \$ 400,000 minimum per year for introduced species management
- \$ 11 million minimum for inholding acquisition and management over the next five years

Note that the use of the acquisition budget should not be restricted to inholdings but include perimeter acquisitions. It may be therefore be appropriate to seek a higher level of funding.