Western Australian Planning Commission

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Moresby Range
Management Strategy

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Foreword

The final Moresby Range Management Strategy completes the long-term planning for this prominent feature of the Geraldton region. One of the key recommendations of the strategy is the development of the Moresby Range Management Plan. This plan represents the next stage of planning for this area and has been substantially progressed. The plan will provide greater detail on how the recommendations in the strategy can be achieved especially in the detailed investigation area.

Working in combination, the strategy and plan will provide a sound planning framework for the protection and enhancement of the ranges' landscape and environmental values, and will provide guidance for development and activities on the range over the next three decades. The success of this planning framework will rely heavily on commitments by state and local governments, the private sector, landowners and the general public to cooperatively progress the framework's recommendations and initiatives.

The draft Moresby Range Management Strategy was advertised for a period of three months from October 2008 to January 2009. In this period, seventeen submissions were received from landowners, community groups, planning consultancies and government agencies.

As a result of feedback received, there have been some minor changes and additions to the strategy which include:

- additional direction on the issue of windfarms;
- inclusion of information on geology and last stand vegetation on the ranges;
- greater emphasis on the value of priority agricultural land; and
- minor text and mapping modifications.

I would like to thank all those who provided comment on the draft strategy and contributed to its finalisation. I encourage those involved in the development of the Moresby Range Management Plan to continue its progression as the next stage of planning for this unique regional asset. This work will also provide an important contribution to the work of the soon-to-be-established Mid West Regional Planning Committee which will enable a more coordinated and strategic approach to the whole region.

Gary Prattley
Chairman
Western Australian Planning Commission

Contents

1. Introduction

The Moresby Range is a prominent feature in the Geraldton region and the broader northern agricultural region. It has high landscape values and forms a significant landscape backdrop to the Geraldton regional centre and key regional roads (see figures 1 and 2). Indigenous and non-indigenous cultures have recognised the importance of the range's conservation value and its potential to become a unique recreational and environmental asset to the region.

Fragmented land ownership, increasing development pressures, and the legacy of historical land clearing and management practices threaten the integrity of the range. For the values of the range to be protected and enhanced, future development and land management activities need to be based on a sound planning framework.

Figure 1: The Moresby Range as it presents from the suburb of Geraldton.

Figure 2: The Moresby Range as it presents from the port of Geraldton

This strategy supports the coordinated management of the Moresby Range by government agencies, private sector organisations, landowners and community groups. It aims to protect, enhance and promote the regional significance of the Moresby Range over the next 25 years by establishing common objectives and recommendations that assist with planning decision-making, local policy formation, and consistent management of future land uses and development.

The objectives of this strategy are to:

- protect, conserve and enhance the natural values of the range;
- protect the indigenous and non-indigenous cultural values;
- improve public access and recreation opportunities;
- manage the risk of erosion and bushfires; and
- ensure a consistent and coordinated policy approach by local and state government to planning decisions.

This strategy has been structured into five parts:

- **Planning context** details the local and state planning background of the study area.
- **Background and methodology** details the history of the project and the process undertaken in preparing the strategy.
- **Profile of the range** highlights the physical and cultural attributes of the study area.
- **Management strategy** presents recommendations resulting from the research.
- **Implementation** identifies responsible authorities, funding and timeframes, and monitoring and review processes.

1.1. Land Tenure

Originally there were five extensive pastoral leases across the region. Altogether these leases, which included Erin, Oakabella, White Peak, Narra Tarra and the Bowes, encompassed the entire range and the Chapman Valley. Following the *Agricultural Land Purchase Act 1896*, these properties were subdivided into smallholdings to allow for closer settlement.

The majority of the range today is privately owned, as illustrated on map 1. Several small portions of the range's flat tops are in public ownership – the Water Corporation and Telstra services at Waggrakine, the Department of Environment and Conservation's Wokatherra Nature Reserve, a small portion of the Howatharra Nature Reserve, and a state government-owned quarry north of White Peak Road. Two future conservation estates north of White Peak Road are set to be state government-owned (map 5); these are the proposed Moresby Range Nature Reserve (western site) and the proposed Moresby Range Conservation Park (eastern site).

1.2. Geraldton Region Plan 1966-1999

The first region plan for the Geraldton area was prepared in 1966 and reviewed in 1976 and 1989. These strategic plans set out principles and broad directions for development and growth. A summary of the key directions as they relate to the Moresby Range is provided in this section.

1.2.1. Geraldton Regional Planning Study 1976

The 1976 study proposed to protect the scenic value of the Moresby Range by zoning against more intensive forms of subdivision to create reservations in limited areas where appropriate. The study included the coastal portion of the range between the Chapman River and the Buller River in a regional

open space reserve. The intention was to create a regional open space link along the Buller River alignment between the Moresby Range and the Indian Ocean.

1.2.2. Geraldton Region Plan 1989 (draft)

While the 1989 plan was never finalised, it was used as a guide for planning decision-making for many years. This plan identified a similar area to the 1976 study as regionally significant, but as a landscape protection zone rather than regional open space. The 1989 plan recommended areas with recreation and tourism potential be acquired and that the regional open space reserve along the Chapman River be extended.

1.2.3. Geraldton Region Plan 1999

The 1999 plan incorporates two principal components:

- Policy frameworks and regional strategies for the City of Geraldton and the shires of Greenough, Chapman Valley, Northampton, Mullewa and Irwin.
- The Greater Geraldton Structure Plan, which included the Moresby Range and land further east, north and south of the area commonly referred to as the range, including the gently inclined foot slopes.

The plan states that some areas of the Moresby Range have high conservation value and others have agricultural, landscape, tourism and/or recreational values.

The objective for recreation, landscape and conservation areas according to the plan, is to:

> *Create an integrated system of open space, landscape protection areas, conservation areas and recreation areas to accommodate local and regional requirements.*

In order to achieve this objective, the Geraldton Region Plan recommended the preparation of a management strategy to protect the landscape value of the Moresby Range. The plan recognised that a Moresby Range Management Committee had already been formed and encouraged the ongoing work of the committee to formulate such a strategy.

1.3. Local Planning

Recognition of the significance of the Moresby Range is also incorporated into the planning schemes and strategies of the relevant local governments. The Shire of Greenough Town Planning Scheme No. 4 (1984) does not permit development above 120 metres Australian height datum (AHD). The Shire of Chapman Valley Local Rural Strategy (1994) sets criteria that need to be considered in the type, siting, and design of development in the range. The proposed local planning schemes and strategies for the City of Geraldton-Greenough and shires of Chapman Valley and Northampton all seek to preserve the landscape qualities of the range. As the values of the range extend across three municipal boundaries, it is desirable to have a consistent policy approach to preserving the values across each of the shires.

2. Strategy Background and Methodology

Formal commitment to the preparation of a management strategy occurred in 1995 with a proposal by the (then) Ministry for Planning to initiate the project.

The Moresby Range Management Committee was formed and had its inaugural meeting in 1996. The committee comprised elected representatives and technical staff from each local government and representatives from government departments and community groups.

The aim of the committee was to examine the land management requirements for the range. More specifically the committee aimed to:

- determine the extent and regional significance of the Moresby Range; and
- define a system of land management for the range.

The shires of Greenough, Chapman Valley and Northampton and the City of Geraldton contributed a total of $12 500 to the preparation of the strategy while the Western Australian Planning Commission (WAPC) contributed a further $12 500.

Preparation of this strategy has been an ongoing process requiring commitment from those involved over an extended period of time. The methodology included the formation and meeting of technical and steering committees; preparation of detailed assessments of visual landscape and conservation significance of the range; public consultation through questionnaires, public meetings, workshops, and interviews; preparation of internal reports and preparation of a draft strategy by O'Brien Planning Consultants; and specific consultation with the wind farm industry.

While this strategy has been in preparation for some time, the importance of a consistent policy approach to retaining the range's unique values remains an objective important to stakeholders and the community generally.

2.1. Background Studies

This strategy draws substantially from two studies undertaken as part of the research into the landscape and conservation significance of the range; these are:

- A Conservation Assessment of the Moresby Range
- The Moresby Range Landscape Assessment Study.

Both of these studies are included in the appendix of the draft Moresby Range Management Strategy prepared by the Department for Planning and Infrastructure (DPI) in 2003.

2.1.1. A conservation assessment of the Moresby Range

The conservation values of the Moresby Range have been recognised for some time. The Environmental Protection Authority's (EPA) System 5 Report identified the northern sand plains, which includes the Moresby Range, as floristically rich and recommended that representative areas needed to be protected with controlled access for people to enjoy the "spectacular and diverse floral displays". More specifically, the report recognised "the scarcity of conservation reserves in the Geraldton area and the scenic attraction of the Moresby Range", recommending that land be acquired for the purpose of establishing national parks.

More recently, the (then) Department of Conservation and Land Management prepared A Conservation Assessment of the Moresby Range in support of the Moresby Range Management Strategy. This assessment provided a desktop overview of the conservation values of the range, and assessed the adequacy of the conservation reserve system in the study area. The fundamental objectives of the reserves are to conserve a wide diversity of species, ecosystems and landscapes. The study includes an assessment of the geology, land types, flora and vegetation communities of the range, the data of which has been included in the profile section of this strategy. Potential areas for conservation management were also identified in the conservation assessment. Key recommendations of the conservation assessment have been incorporated into this strategy.

2.1.2. Moresby Range landscape assessment study

A detailed assessment of the landscape values of the Moresby Range in detailed assessment areas was undertaken by the (then) Ministry for Planning in 1998. The landscape assessment included four main tasks: inventory preparation; landscape character classification and description; assessment of significance; and assessment of access and views.

The assessment concluded that the Moresby Range has been a source of visual interest since the area was first inhabited: from indigenous ancestors, to the first European survey expeditions and to the current community. It established that the landscape's high values are primarily associated with landform, especially the steep side slopes and isolated peaks of the coastal section. Other visual elements identified as contributing to the visual significance of the range include:

- rural and historic building forms;
- rural textures and patterns;
- seasonal variations of rural colours;
- views to the range;
- views from the range;

- the noticeable visual transition between landscape elements;
- visual access; and
- travel route corridors.

A set of criteria was established in the landscape assessment (included in the appendix of the landscape assessment) that outlined means to identify significant landscapes, access routes and key view corridors. Please note, there is no revision of the landscape assessment study proposed at the time of publishing. Ground truthing of specific sites is required to confirm findings of the study.

2.2. Consultation and Study Management

There has always been significant community interest and support for the idea of a Moresby Range Management Strategy. The challenge has been to produce a document that reflects and best accommodates community values without placing unreasonable expectations or restrictions on existing and future landowners.

Landowners, local community representatives and the broader community of the local governments have been consulted and involved throughout the strategy development process. Specific community groups, including indigenous people, youth, institutions in the arts portfolio, people from non-English speaking backgrounds, tourism focus groups, environment focus groups and women's focus groups have also been engaged at various points. Results of the consultation were published in the City of Geraldton's Cultural Mapping Report 1997 which revealed that all bar the non-English speaking focus group identified the Moresby Range as one aspect of the natural environment valued by residents and visitors. More specific issues directly related to the Moresby Range that arose during the consultation were:

- The Moresby Range is a place of particular value and possibly needing protection and/or enhancement.
- The difficulty in obtaining public access to the Moresby Range, particularly due to the high level of private land ownership.
- The need for protection from urban encroachment, farming and erosion.
- A need for "well designed, site specific signage and interpretive material for nature-based tourism".
- The need for properly managed ecotourism and walkways.
- The lack of places to camp in the Moresby Range.
- The Moresby Range was identified as a natural division between the coast and the inland.
- The general concern about possible development on the Moresby Range. The existing restrictions for building above a certain height were perceived positively.
- The need for a coordinated approach to the planning and management of the Moresby Range particularly given that they span several local governments.
- The need to protect remnant vegetation, including fencing from livestock.

Overall, the desire for improved access, tourism, recreation and revegetation were common issues raised in discussion of the Moresby Range in most focus groups.

Consultation was undertaken with local native title claimant groups, officers of the Yamatji Land and Sea Council, the Yamatji Language Centre, officers of the Indigenous and Torres Strait Islander Commission, individuals, as well as public meetings to determine the cultural significance of the Moresby Range to the present indigenous community. This consultation confirmed the significance of the Moresby Range for the present indigenous community. The community agreed to be involved in a management and advisory capacity to ensure that future use of the range accommodates indigenous significance.

2.3. Study Area

Located to the north and east of Geraldton, the Moresby Range rises over 200 metres and is characterised by distinctive flat mesa tops. The range runs roughly parallel to the coast for about 33 kilometres, averaging about 6 kilometres from the coast. The main western portion is about 1.5 kilometres wide, extending from Table Hill in the north to Mt Fairfax in the south (map 2).

The study area, shown in map 2, covers approximately 55 000 hectares and includes land between the range and major travel routes. These areas adjacent to the range compromise the foreground for some of the best views of the range.

The extent of the Moresby Range has been a topic of considerable discussion in the past. Perceptions of the extent of the range vary, with most people associating the range with an area much smaller than the area defined by the geomorphologic land system. This management strategy adopts the Moresby Range land system as the study area; however, the focus, in terms of use and management, is on areas most commonly recognised as the Moresby Range. This is referred to as the detailed investigation area as shown on map 2 as part of the broader study area and on map 8 in greater detail. Due to the extensive nature of the range, this report plays particular attention to resolving management issues in the Detailed investigation area, as this portion of the range is most accessible from Geraldton and will have the greatest development pressure in the near future.

The southern boundary of the Detailed investigation area follows the Chapman River between Chapman River East and the North West Coastal Highway, apart from the section where the river is closest to Geraldton Mt-Magnet Road. The western boundary follows the North West Coastal Highway but continues around Table Hill in the north. Isseka forms the northern boundary of the study area. To the east, the study area extends out to Nabawa, around the back of hills along Murphy Norris Road and down along Chapman River East Road. The southern portion of the range is situated approximately five km east of the northern half of the Geraldton urban area.

3. Profile

3.1. Physical Environment

3.1.1. Geology

The Moresby Range is a remnant of the western edge of the Victoria Plateau. The range became separated from the Victoria Plateau by the actions of the Chapman River and its tributaries during Pliocene times, forming much of the present landscape. Map 2 illustrates the geology of the Moresby Range.

Lateritic flat tops are the defining feature of the range (figure 3). They extend north-south through the length of the coastal range and form the centre of the inland range south of the Chapman River, as well as a smaller north-south oriented line behind the coastal range north of the Chapman River. Conical-shaped hills at the edges of the range are similar in geology to the flat tops except the laterite caps have been eroded.

Figure 3: Typical profile of the range's flat tops (note White Peak on the right is a conical-shaped hill).

Steep, shallow, rocky side slopes and recent colluvial foot slopes wrap around the flat tops. The profile of the side slopes is fairly uniform, with the slope increasing with height. The steepest side slopes are at Wokatherra Hill and north of White Peak Road, extending for a horizontal length of around one kilometre.

The side slopes and sandy soils of the range are susceptible to wind and water erosion. This is particularly apparent on steeper slopes of the range, where there is clear evidence of landslips (figure 5). Many sections of the side slopes are unstable and bare rock faces are visible.

3.1.2. Climate

The study area has a Mediterranean climate, characterised by hot, dry summers and mild winters. Average maximum temperatures range from 19 degrees Celsius in winter to 32 degrees Celsius in summer. The average annual rainfall for the area is 449.4 mm, most of which occurs during winter.

The wind in the region is dominated by the effects of the land-sea interface. Offshore morning winds and afternoon sea breezes are common, particularly in the warmer months. The hot, dry and windy conditions in summer make the study area particularly vulnerable to bushfire.

3.2. Conservation Attributes

3.2.1 Vegetation

The original vegetation of the Moresby Range consisted of floristically diverse kwongan (open shrub lands) and woodlands vegetation communities. Due to clearing for agricultural pursuits, less than 10% of the original vegetation of the Moresby Range remains (figure 4). Vegetation types are illustrated in map 3. There are patches of remnant vegetation throughout the range, most of which occur on private property and are generally small (less than 20 hectares), narrow and fragmented; however, there are a number of intact areas of remnant vegetation of significant size (figures 5 and 6).

Some of the remnant vegetation is degraded, categorised as “scattered”, with most understorey plants removed as a result of stock grazing and selective clearing (map 5). Areas of remnant vegetation that fit these descriptions do not have high conservation value given their lack of ecological integrity. However, from a land conservation perspective these areas should be targeted for revegetation to assist in combating soil erosion.

Figure 4: Due to clearing for agricultural pursuits, less than 10% of the original vegetation of the Moresby Range remains.

Figure 5: Existing flora on the range is fragmented (note erosion evident on the side slope).

Figure 6: There are still intact areas of remnant vegetation of significant size.

A number of conservation priority flora taxa occur within the range (map 4). This includes four species of declared rare flora as well as priority one, two, three and four flora. Populations of each species generally occur at several locations; however, are situated in habitats that are poorly represented in the current reserve system.

3.2.2. Fauna

The faunal composition of the Moresby Range has not been documented. Baseline surveys are required for all faunal components.

3.2.3. Watercourses

The Chapman River and associated tributaries traverse the study area. Numerous wildlife corridors exist along natural drainage lines linking the Chapman River with the Moresby Range; however, extensive degradation is evident. The protection and enhancement of the Chapman River and associated tributaries is essential to maintain the biodiversity and ecological integrity of the area and downstream environs.

3.3. Cultural attributes

The Moresby Range represents a significant feature in the cultural landscape for indigenous and non-indigenous people in the region.

3.3.1. Indigenous significance

It is understood that the Geraldton region, including the Moresby Range, is culturally significant for local indigenous people. However, due to a lack of documentation, the extent and nature of the significance of the range is not well understood. Archaeological and anecdotal evidence indicates that prior to European settlement, indigenous people were using the range. It is highly probable that they have historically had close association more generally with the hills and watercourses of the study area.

In 1997, the (then) Ministry for Planning undertook a review of indigenous sites in the general vicinity of the Moresby Range. The assessment concluded that there were no registered sites within the Moresby Range itself. However, a number of sites in close proximity to the range were identified.

S02818	Oakajee Springs (east of North West Coastal Highway)
S00007	West of Wokarena Peak
S02950	Hemsley Farm (west of Wokarena Peak)
S02742	Chapman River (near Cutubury Pool, Moonyanooka)
S02743	Chapman River (near Cutubury Pool, Moonyanooka)
S02526	Scabby Station Gully (Kojarena)

These are all archaeological sites, comprised of artefacts, except Wokarena, which is an engraving.

The latest record of registered indigenous heritage sites in May 2005 has been included in the process of developing this management strategy. Consultation with representatives of local indigenous groups has also revealed other areas of interest to local indigenous people.

3.3.2. Non-indigenous significance

The cultural significance of the range to non-indigenous people is tied closely to landscape values, historic sites and the evolution of settlement patterns (figure 7).

Figure 7: Historic buildings indicate previous settlement patterns on the range's foot slopes.

The landscape value of the Moresby Range was recognised by the earliest European explorers. For example, in 1839, Lt George Grey remarked on the distinct characteristics of the range:

> 'A lofty chain of mountains, flat-topped, so irregular in their shape and outline that they seemed rather the work of art than nature. Such moments as these repay the explorer for much toil and trouble' (Halley & Wilson, 1946).

Europeans first settled the range in the 1850s, predominantly for broad acre farming purposes. The agricultural potential of the valley in the study area also contributed to the historic pattern of land use and development. Initially the area was used as pasture for cattle, sheep, pigs and horses. However, over time, cropping became the predominate use.

European settlement was enhanced by rail links through the area. The Northampton to Geraldton rail line, opened in 1879, was the first publicly owned railway in the state. In 1910 the Wokarena-Naraling Branch was also opened. Communities such as the town of Nanson, emerged around railway sidings with public buildings such as schools, churches and halls built.

Following the closure of the rail lines in the 1950s, the road network was upgraded and expanded. Despite the rail line closure, much of the corridor on which the line was constructed is still in public ownership.

The original pastoral leases that covered the study area and the associated homesteads are an important part of Geraldton's heritage. European heritage sites identified as part of the preparation of this management strategy include

- "Coffee Pot" and Waggrakine Well
- White Peak Homestead and outbuildings
- Old Howatharra townsite
- House at Yetna
- Ruins of house at Yetna
- Chalanooka - a house at Yetna
- Buildings at Nanson

In recent times the use of the area has further intensified and diversified, including a wide range of crops, as well as market gardens and aquaculture ventures.

3.4. Landscape Values

The Moresby Range is an integral part of the Geraldton region and a well-known landscape feature to residents and visitors alike. The flat-topped range forms a distinctive backdrop to Geraldton and major transport routes.

The coastal component of the range is the most visually dramatic due to the steepness of the west facing slopes and the length of these slopes. This section of the range is viewed principally from the North West Coastal Highway and provides a steep, almost continuous, north-south backdrop to the coastal plain. The views are punctuated by valleys or passes at Waggrakine, White Peak Road and Howatharra Road. The area from Wokatherra Hill to Howatharra Road is particularly significant as it contains the steepest slopes and the most extensive coverage of remnant vegetation.

The range's side slopes are a key feature in the views from Geraldton and major roads (figure 8). Discrete wayside stopping and viewing areas have been formally developed along North West Coastal Highway, Geraldton-Mt Magnet Road, Chapman Valley Road, Morrell Road and other principal access roads in order to allow people to further appreciate these values.

Figure 8: Major roads provide views to the range's side slopes.

3.5. Land Use Issues

3.5.1. Public access and recreation

The Moresby Range is predominantly within private property. This limits public access and restricts opportunities for recreation in the Moresby Range. As a result, the true value of the range's flat tops is probably not fully appreciated as there is limited public road access to most of the range and no general public access to the top of the coastal range.

Recreational use is currently limited to:

- Mill's Lookout where people can take advantage of views from within the range;
- private property where landowners provide access for specific recreational activities (ie mountain biking, hang gliding) on an informal basis; and
- commercial developments that give people the chance to take in views from the range.

Land tenure presents the greatest planning challenge to the future use of the range, and subsequently impacts on the successful implementation of the strategy's recommendations. Key to the implementation of this strategy is working with local landowners to retain the range's conservation value and enhance its recreation potential. It is also necessary to recognise the existing land uses, such as cropping and grazing, and that such uses should generally be permitted to continue.

3.5.2. Current land use and development pressure

While the study area has historically been used for broad acre farming, its proximity to Geraldton makes it susceptible to development pressures generated by continuing growth of the city and the need to service an increasing number of residents and visitors.

Productive agricultural land is a finite resource which forms a significant part of the Western Australian economy. Land degradation and the establishment of non-agricultural uses within proximity to such land can increase farming restrictions, adding to

Figure 9: New rural living and hobby farm properties are being developed in the vicinity of the range

pressure from development and contributing to a reduction of land available for agriculture.

The continuing expansion of Geraldton will see increasing development interest, particularly for rural living, hobby farming, more intensive agricultural uses and commercial uses that would benefit from the scenic qualities of the range (figure 9).

Housing estates between Geraldton and the range are beginning to occupy the foot slopes (figure 10) and it is likely that pressure for rural subdivision of the foot slopes and in the Chapman Valley will continue.

Several parts of the coastal side of the range, and to a lesser extent in the Chapman Valley, have been subdivided or are identified for rural residential subdivision. Large areas in the Chapman Valley have also been subdivided or identified for rural smallholdings subdivision.

There is a diversity of uses in the Chapman Valley and there have been suggestions of tourist development on the top of the range behind Geraldton. It is likely that the development pressures will be intensified by the development of a deep water port and industrial estate at Oakajee.

Figure 10: Housing is beginning to occupy the foot slopes of the range.

3.5.3. Infrastructure

Across the study area there is a large amount of infrastructure that impacts on the landscape. This infrastructure includes roads, electricity transmission lines, water pipelines, water tanks, telecommunication towers and rail lines. There will be increasing pressure for additional infrastructure to be accommodated in the study area in the future.

Demand for a new port, industrial estate and infrastructure is currently being driven by the rapid expansion of mining and exploration in the region. This has led to the consideration of an infrastructure corridor as indicated on maps 5 and 6.

4. Moresby Range Management Strategy

The values of the range are primarily linked to its form, its native vegetation and a cultural association with past and current use. Additional land use and development has the potential to either threaten or enhance these values. This strategy seeks to provide guidance in the form of recommendations on how and where additional land use and development can be accommodated without compromising the values of the range, and through identifying management measures that will enhance and protect these values. The strategy lists recommendations under five key headings relating to strategy objectives; these are:

- conservation management;
- cultural heritage;
- public access and recreation;
- erosion and bushfire management; and
- preserving landscapes through coordinated management.

Some recommendations make reference to the development of a management plan. The management plan will be prepared specifically for the Detailed investigation area (see part 5.1 management plan for the Detailed investigation area). It is suggested that local governments consider the merits of applying such recommendations to portions of the range outside the Detailed investigation area, where appropriate, to maintain a consistent planning approach to the broader study area.

4.1. Conservation Management

Objective: *To protect, conserve and enhance the natural values of the range.*

4.1.1. Conservation reserve system

The existing nature reserves under-represent the distinct ecological communities of the Moresby Range study area due to their small size and location. Two of the three primary vegetation units of the study area are poorly represented in the conservation reserve system.

In order to meet conservation objectives, including better representation of priority flora and ecological communities in state reserves, the expansion of the reserve system would is necessary. This could be achieved by the acquisition of discrete areas of intact remnant vegetation. The state government has purchased two large tracts of land with remnant vegetation directly to the north of White Peak Road. Further acquisition of additional land for inclusion into nature reserves or conservation parks will depend on funding availability.

No	Recommendations: conservation reserve system
1	Identify areas of the range that are desirable for acquisition as nature reserves or conservation parks, with consideration of the location of existing nature reserves, identified areas of remnant vegetation for conservation management and proposed vegetation corridors (all identified on map 5).
2	Seek opportunities to obtain funding (government or private) to purchase portions of the range for conservation and recreation purposes.
3	Ensure adequate resources are allocated for the maintenance and management of land used for conservation and recreation purposes.

4.1.2. Management of remnant vegetation

The remnant vegetation of the Moresby Range is generally degraded and fragmented. A multidimensional approach is required to ensure that significant remnant vegetation is protected. This includes specific natural resource management techniques, such as the control of feral animals and the incorporation of conservation values into land use planning and assessment.

No	Recommendations: management of remnant vegetation
4	Seek opportunities and promote programs that aim to retain biodiversity on the range through the eradication and/or control of weeds and feral animals, and the protection and rehabilitation of remnant vegetation.
5	Ensure that identified rare fauna and threatened ecological communities are not disturbed, where possible.
6	Encourage revegetation around areas of conservation significance in order to provide buffers as part of land use or development proposals over those areas. Key target areas for vegetation corridors are shown in map 5.

4.1.3. Conservation management on private land

As most of the identified remnant vegetation is located on private property, it is critical that landowners are supported and encouraged to manage the conservation values of their land. This includes access to information, funding and expertise.

No	Recommendations: conservation management on private land
7	Recognise efforts being undertaken by landowners to conserve the remnant vegetation on their land. Support those landowners who wish to register under the Land for Wildlife Scheme, managed by the Department of Environment and Conservation (DEC).
8	Seek opportunities to raise landowner awareness of the value of the remnant vegetation on their properties and support landowner's proposals to protect remnant vegetation. Assistance may be obtained from the relevant local government, DEC, Department of Agriculture and Food (DAF) and the Northern Agricultural Catchments Council (NACC).
9	Seek opportunities to engage relevant agencies, such as the DEC, DAF and NACC and to help landowners access funding for conservation initiatives. This could include assistance with funds for fencing and the provision of management advice.
10	Encourage the use of conservation covenants or formal management agreements between the landholder and other relevant organisations such as the DAF, DEC or the National Trust. These agreements can be specifically tailored to the requirements of the landowner and the management needs of remnant vegetation on the property.
11	Ensure land use and development proposals maintain and, where possible, enhance any conservation values associated with the land or an adjacent nature reserve. Consideration should be given to the potential to create conservation lots, as per Development Control Policy 3.4 Subdivision of Rural Land (WAPC, 2008).
12	Develop management measures for land use or development proposals within or adjacent to nature reserves to protect and, where possible, enhance the conservation values of the nature reserve. The management measures should also incorporate the protection of rare and priority flora in recorded locations of threatened ecological communities to guide land use or development proposal for the surrounding area.
13	Promote the revegetation of vegetation corridors identified in **map 5** in consultation with landowners as part of land use or development proposals over those areas.
14	Ensure that land use or development proposals over land containing, or adjacent to, an existing or potential vegetation corridor reasonably contribute to the provision and/or enhancement of the vegetation corridor.

4.1.4. Revegetation

Due to the fragmented and degraded nature of the existing remnant vegetation of the Moresby Range, strategic programs of revegetation are required to protect its conservation values and benefits to local fauna. A strategic approach and further trials are required in order to ensure that the revegetation efforts are effective, particulary for revegetation on steep side slopes.

No	Recommendations: revegetation
15	Working with land owners, target and prioritise areas for revegetation, including areas identified as vegetation corridors, shown in map 5.
16	Seek expert advice from the DEC, DAFWA and NACC regarding revegetation in terms of site preparation (weed removal) and the selection of native and local species from local provenance. Consideration should be given to the EPA's Guidance for the Assessment of Environmental Factors, No. 6: Rehabilitation of Terrestrial Ecosystems (2006).

4.1.5. Watercourse management and water resources

Some sections of watercourses in the study area have suffered from poor management in the past. Attention needs to be paid to the development of buffers and foreshore reserves, the potential impact of more intensive land uses and the implementation of management recommendations from the Chapman River Foreshore Assessment Report WRM23 (Water and Rivers Commission, 2001).

No	Recommendations: watercourse management and water resources
17	Implement the recommendations of the Chapman River Foreshore Assessment Report WRM23 (Water and Rivers Commission, 2001) to restore and manage the Chapman River and associated tributaries.
18	Ensure that the assessment of land use and development proposals on land containing, or adjacent to watercourses provides for appropriate levels of public access, foreshore management and, where necessary, foreshore reserves. Determining appropriate setbacks and buffers from waterways should be based on the proposed land use; consideration of State Planning Policy 2.9: Water Resources (WAPC, 2006); and a biophysical criteria assessment, as defined in the Foreshore Policy 1 - Identifying the Foreshore Area (Water and Rivers Commission, 2002).

4.1.6. Further conservation assessment

The conservation assessment (Department of Conservation and Land Management, 1996) provides a desktop overview of the conservation value of the remnant vegetation of the Moresby Range; however, an assessment of potential conservation areas requires groundtruthing in order to verify the flora and fauna attributes of the area and the integrity of the vegetation communities. Groundtruthing should involve consultation with landowners during the formulation of an agreed management strategy for these areas. This would involve identifying existing and possible vegetation expansion areas with the view to establishing connections of reserves, providing for public and private access, restricting land clearing and providing fencing among other management measures. Once prepared, the management strategy could be used to support applications from state and federal funding sources, such as the National Heritage Trust, to protect and enhance conservation values.

A detailed conservation assessment of flora and fauna should be undertaken on portions of the study area considered to be under development pressure or deemed to have high conservation value.

No	Recommendations: further conservation assessment
19	Undertake groundtruthing of the areas identified in map 5 as being potential candidate areas of remnant vegetation for conservation management and include areas of the range under development pressure. Conduct landowner consultation during groundtruthing exercises and the formulation of management plans for these areas.
20	Seek opportunities for state and federal funding sources for the maintenance of high conservation value areas.

4.2. Cultural Heritage

Objective: *To protect indigenous and non-indigenous cultural values.*

The Moresby Range represents a significant feature in the cultural landscape for indigenous and non-indigenous people in the region. It is important that these cultural values are incorporated into future planning and management.

Cultural values are inherently linked to landscapes and land use; therefore, measures to preserve landscape values should be considered. Private ownership of much of the range has limited public access opportunities. Providing greater opportunities and access for people to experience the range will increase their appreciation of its qualities.

The protection and conservation of indigenous heritage is important to maintaining the identity, health, and wellbeing of local indigenous people. Consultation with

representatives from local indigenous groups has identified registered heritage sites and several areas of interest to local indigenous people (a number of sites are identified in map 6). Alterations to the form and use of the range may affect the traditional association local indigenous groups have with the range. Therefore, it is important that local indigenous groups be provided the opportunity to be involved in the planning and management of public spaces in and around the range.

The Department of Indigenous Affairs should be contacted on matters relating to the *Aboriginal Heritage Act 1972*. A number of European heritage sites have been included in map 6. Destruction or decay of these historic places may compromise the cultural values of the range and reduce its tourism potential.

No	Recommendations: cultural heritage
21	Involve local indigenous groups in planning, including naming and management of the range, and any proposed changes to this strategy, to ensure traditional indigenous cultural values are respected and incorporated.
22	Retain places of identified heritage significance and consider any land use or development proposal that seeks to incorporate indigenous and/or European heritage values. This may also include recognition of existing cultural practices, such as hunting for traditional food sources.
23	Consider establishing a heritage trail in the range. Set up a working group consisting of local government representatives, local community groups and landowners to identify the most appropriate location for the trail (part 4.3.2 walk trails and recreational links).

4.3. Public Access, Tourism and Recreation

Objective: *To improve public access and recreation opportunities.*

A high level of private ownership has limited public access to the Moresby Range. Through a combination of public and private investment and development, opportunities exist to provide the public with access to the spectacular views from the range, and take part in associated recreational pursuits.

4.3.1. Enhance public access and facilities

In recent times, the amount of public land in the Moresby Range has increased substantially, with the DEC purchasing a large area north of White Peak Road. It is envisaged that this proposed conservation park will protect natural values while providing for a range of nature based recreation and tourism opportunities. There are opportunities for a formal public range-top lookout area, and additional improvements could be made to existing roadside stopping and viewing areas that exist along major travel routes in order to increase public use and enjoyment of those areas. Chapman Valley

Road and White Peak Road passes represent potential public access points and activity nodes for views, active recreation and conservation-oriented recreation respectively. The creation of scenic roads along the edge of flat tops of the range are not supported as they may compromise the landscape values of the range and impact on the quiet enjoyment of those visiting the area. Vehicle access to a central location with scenic trails and walkways emanating from this site is the preferred means to allow access to the range. The implementation of such plans would increase use of the range and appreciation of its recreational value.

There are also opportunities to accommodate more active recreation pursuits throughout the range. Some activities are currently occurring on a limited number of properties where landowners provide access for specific recreational activities on an informal basis. The formalisation of recreational access and facilities, as well as consideration of commercial uses, should be explored in more detail in a management plan for the Detailed investigation area.

The Moresby Range, offers a natural landscape attraction for visitors. There are many opportunities to take advantage of the views to and from the Moresby Range in order to capitalise on these growing tourism trends.

No	Recommendations: enhance public access and facilities
24	Identify potential areas for land acquisition, such as the strategic area adjacent to where Chapman Valley Road passes through the range. Engage with and consult landowners in this process. Seek opportunities to obtain government funding to purchase portions of the range for the benefit of the Geraldton region.
25	Ensure that the management plan identifies existing and potential points for public access, recreation activities (walking trails and guided tours, horse riding trails and riding lessons, bike riding trails, bird watching, hang gliding, astronomy, orienteering, kite flying, wildflower tours, game parks) and public facilities (picnic/BBQ areas, car parking, disabled access, drinking water, ablution facilities, shade, viewing areas/lookouts, interpretive signage including indigenous interpretation areas, campsites, and access roads).
26	Ensure that the management plan identifies areas suitable for eco-tourism and other tourist developments, consistent with local planning strategies and state planning policies, and seeks opportunities to establish such facilities.
27	Seek opportunities to provide the necessary infrastructure and management to accommodate public access to parts of the range. Integrate private developments that already form part of the social and recreational values into this infrastructure provision.

4.3.2. Walk trails and recreational links

The incorporation of trails and recreational links into the Moresby Range will provide a recreational resource for visitors to the range, and will generate tourism opportunities. The few accessible locations, such as Waggrakine Pass, are evolving as regional attractions and could provide a focal point for compatible uses. The development of recreational links, such as walk trails from the Chapman River to the Moresby Range, would provide the opportunity to strengthen the connection between the range and Geraldton. Other major watercourses to the north, such as the Buller and Oakajee rivers and Oakabella Creek run from the coastal side of the range to the ocean, and provide the opportunity to link the range to the coast.

The old Geraldton-Northampton rail reserve, via the old Naraling rail reserve and/or intercepting watercourses, provides an opportunity for a heritage trail from the northern hinterland of Geraldton through the northern extent of the range to Northampton and beyond to the Galena Mining Heritage area and Kalbarri National Park (map 6).

Previously, community groups have looked at developing trails through the Moresby Range. Currently, no trails are formally recognised or signposted. Significant work is required to finalise potential trails, which would require initiatives from local authorities and stakeholders, in consultation with landowners and the local community, to seek agreement on the location of a preferred route or routes.

No	Recommendations: walk trails and recreation links
28	Ensure that the management plan identifies and establishes linkages to other existing and potential attractions through a network of walking trails and recreational links.
29	Seek opportunities to develop trails in sections of the disused railway reserves and watercourses on both the coastal and inland side of the range. Conduct landowner consultation to establish preferred trail locations.

4.3.3. Risk management

It is recognised that the risk of erosion and bushfire increases with greater resident and tourist numbers on the range. This is addressed through the current planning process. Land must be zoned appropriately - with referrals to various departments and agencies for advice - before intensity of land use can be approved. Zoning controls, in conjunction with subdivision and development controls, provide local governments an avenue to intervene or apply conditions to reduce or minimise the potential for risk.

It is necessary to highlight ways of providing greater access to the range without compromising the values of the range. Special attention should be given to:

- addressing the potential impacts of damage to flora, increased risk of erosion and landslips, and increased fire risk; and
- taking into account the potential risks associated with steep side slopes and other hazards when determining appropriate public access and recreation uses in the range and the management of these uses.

No	Recommendations: risk management
30	Consider areas that are potentially subject to a high level of risk when identifying strategic locations for areas most suitable for public access, with a view to minimising risk. This process should include consultation with affected landowners. Ensure that a review of the current public access locations is incorporated into research for the management plan.
31	Establish restrictions for motorised vehicle access to areas identified as susceptible to erosion risk, especially on side slopes. Resources should be allocated to manage and police access. Stock access to areas identified as public access locations should be discouraged.
32	Provide signage and fencing, if necessary, that warns the public of risks associated with steep side slopes.
33	Include a set of risk management criteria into the management plan to be used in the assessment of development proposals in the range.
34	Consider new allotment boundaries, roads, walking tracks, trails and firebreak construction in relation to identified areas of high erosion risk and existing contours of the range in order to minimise the impacts of increased stormwater runoff, stock grazing, and vehicle and pedestrian movement.

4.4. Erosion and Bushfire Management

Objective: *To manage the risk of erosion and bushfires.*

4.4.1. Erosion

Wind and water erosion is a major management issue in the Moresby Range. Historic land clearing for broad-acre agriculture has reduced soil stability and made some areas susceptible to soil erosion, especially where overgrazing has occurred. This situation is exacerbated by the dry conditions and strong sea breezes in summer, as well as seasonal thunderstorm events.

The steep side slopes and the sandy soils on the plateaus and foot slopes are particularly prone to erosion. The potential for future landslip events could have serious implications for land use and development on and below side slopes of the range. Slope instability should be managed by a comprehensive approach which includes minimising clearing, limiting use, appropriate boundary allocation and revegetation.

No	Recommendations: erosion
35	Use the DAF's wind and water erosion map unit database (2008 – regularly updated) to identify areas at high risk of erosion. Minimise the clearing of remnant vegetation in these areas.
36	Seek opportunities and promote programs that encourage revegetation of side slopes to lessen the impacts of erosion. Assistance may be obtained from the DEC, DAF and NACC.
37	Seek opportunities to raise awareness of the risks and issues relating to erosion on the range. Discourage landowners from allowing livestock access to side slopes identified as having a high risk of erosion.

4.4.2. Bushfire

Due to the hot, dry, and windy conditions experienced during summer, bushfire must be carefully considered when planning for more intensive uses in the Moresby Range. The frequency of use and location of tourist infrastructure, walking and mountain bike trails, increased development, and visitor numbers may also increase the frequency of fire. Bushfire management is of particular importance in areas where the steepness of the side slopes is likely to make fire fighting access difficult.

No	Recommendations: bushfire
38	Ensure all rural activities using fire, or that carry a fire risk , are undertaken in accordance with, and approved by, the Fire and Emergency Services Authority (FESA).
39	Ensure that where non-rural land uses are proposed, an assessment of the risk of bushfire is undertaken, and the land developed in accordance with Development Control Policy 3.7 Fire Planning (WAPC, 2001).
40	Minimise the risk of fire by considering the location of existing and proposed fire fighting equipment, hardstands, scheme water, rural dams and other fire fighting equipment in the assessment of land use and development proposals that give people access to the range.
41	Ensure that the management plan recommends fire mitigation measures that reflect the natural topography, fragile flora systems and the highly volatile farmland environment of the range.

4.5. Preserving Landscapes Through Coordinated Management

Objective: *To ensure a consistent and coordinated policy approach to planning decisions on the range by local and state government.*

The Moresby Range has continually been recognised as an important landscape feature in planning for Geraldton. Each of the shires included in the study area have landscape protection provisions in their local planning policies and management provisions as part of local planning strategies. It is hoped that greater consistency in management provisions across shires can be achieved through implementation of this strategy.

The Ministry for Planning's landscape assessment study (1998) identified areas of natural and rural landscape significance, as well as general character areas and travel route corridors (map 7). This map was produced in 1998 and may require review; however, as the identified travel route corridors are located along major roads that have not changed significantly, the map has been used as a reference in this instance.

4.5.1. Land use and development planning

The proximity of the Moresby Range to Geraldton makes it susceptible to development pressures generated by continuing growth of the city and the need to service an increasing number of residents and visitors.

No	Recommendations: land use and development planning
42	Develop a management plan to maintain a consistent planning approach across local government boundaries in the detailed investigation area by ensuring that the objectives and recommendations of this strategy as they relate to the detailed investigation area are interpreted and implemented uniformly. Ensure the managment plan is endorsed by the Shire of Chapman Valley, the City of Geraldton-Greenough and the WAPC
43	Ensure that land uses and infrastructure are sited and designed to complement the landscape qualities of the range and reduce their overall impact (figure 11). The key elements of effective landscape planning and design to be considered are: • describing the landscape values that need to be protected; • defining areas that can accommodate more intensive land use or development;

Figure 11: An example of a development that is sited and designed to complement the landscape qualities of the range.

No	Recommendations: land use and development planning
	• selecting suitable land uses and development, including consideration of noise, dust and other potential impacts; • providing for a density compatible with retaining landscape values; • sensitive siting; and • designing buildings and structures to blend into their setting.
44	Ensure that buildings, structures and public or private roads are sited and designed to have minimal impact on views of the range and reflect surrounding character, with reference to the manual, Visual Landscape Planning in Western Australia (DPI, 2007), so that they: • Do not dominate the landscape but are compatible in form, scale, bulk, and mass to their setting. • Give thought to visually concealing all buildings and associated services, such as delivery and storage areas and necessary infrastructure. Where possible, buildings are to be constructed behind or among trees. • Reflect the rural nature of the range and cater for expected level of use, particularly any public or private road, and vehicle manoeuvre areas associated with lookouts; • Blend into the surroundings through use of appropriate colour schemes. • Take advantage of views to the range through appropriate orientation of roads in new subdivisions.

4.5.2. Flat tops and side slopes, key view corridors and travel routes

This strategy aims to encourage land use and development that is compatible with the preservation and promotion of the landscape values of the range. In particular, land use and development on the flat tops and side slopes, and along key view corridors and travel routes, should be monitored and managed in order to maintain and enhance opportunities for people to view the range.

No	Recommendations: flat tops and side slopes, key view corridors and travel routes
45	Minimise more intensive land use and development on the flat tops and side slopes and in key view corridors (identified in map 5) that has the potential to be clearly seen and that would adversely affect the landscape values of the view. Permit more intensive land use and development on the flat tops and side slopes and key view corridors only where it can be demonstrated that such land use and/or development is consistent with the objectives of this strategy.

No	Recommendations: flat tops and side slopes, key view corridors and travel routes
46	Support land use and development proposals abutting areas of high landscape significance, as identified in map 6, where it can be demonstrated that the land use and/or development: a) will not adversely affect views of the range; and b) enhances opportunities for people to enjoy views of or from the range, or experience the range in some other way.
47	Minimise development in key view corridors and travel route corridors (map 5 and map 6 respectively); advocate the siting and design of buildings and structures to have minimum possible impact on key view corridors and from travel routes, and to reflect the surrounding character: • particular attention should be paid to the location and orientation of large sheds and screening to minimise their impact on views to the range; and • lower sites should be chosen, sheds should be orientated perpendicular to the primary view and screening should be provided, whether by vegetation or other development.
48	Ensure that future land use or development maintains the landscape value of the foreground when viewed from major travel routes, and that revegetation and landscaping along and near major travel routes does not affect views of the range from these routes.
49	Consider the impact remnant vegetation clearing may have on views of the range. Discourage the clearing of remnant vegetation where it forms part of a view corridor from a major travel route.

4.5.3. Resource extraction and infrastructure

Across the study area there is a large amount of infrastructure that impacts on the landscape. This includes roads, electricity transmission lines, water pipelines, water tanks, telecommunication towers and rail lines. The ability of the range to absorb the impact of additional infrastructure, particularly visually prominent infrastructure, will depend on the degree to which other values of the range are able to contribute to softening the impact.

Map 4 provides information relating to the geology found within the study area. In recognising that mining interests exist on the range it should be noted that the extraction of resources may conflict with other land uses such as conservation, recreation and tourism; therefore, it is important to ensure careful management of potential and existing raw material extraction and mineral resources. This will facilitate the minimisation of potential land use conflict, the loss of visual amenity, a reduced conservation value, and noise and dust pollution. Given that exploration licenses exist in the study area, subdivision and development applications should be referred to the DMP

for their comment. In addition, any mining proposal in the study area recieved by DMP should be referred to the WAPC for consideration so the objectives and recommendations of the strategy are addressed.

The elevated relief of the range provides an ideal location for the establishment of telecommunication towers. A number of such towers are erected on the flat tops of the range in the detailed investigation area. Their open braced design makes them visually transparent (figure 12). The erection of additional telecommunication towers in the Detailed investigation area should depend, in addition to other matters, on the visual transparency of any proposed towers, and the capacity of the landscape to absorb the visual impact of the structures.

Figure 12: Existing telecommunication towers on the range are relatively inconspicuous.

Westrail identified a rail route from Narngulu to Oakajee in 1997 to provide rail access to the Oakajee port for the proposed Kingstream Resources iron and steel project; however, this rail link was never established. It is now expected that there will be a requirement for an infrastructure corridor, containing rail and other services, connecting the Oakajee industrial area to the existing rail network, the Narngulu industrial area, and to any other rail routes that are established to service mining developments east of Geraldton, including the Oakajee - Weld Range/Jack Hills heavy freight railway. DPI has commenced preliminary investigations for the infrastructure corridor. The final width and alignment may vary subject to further planning and investigation.

During the Strategy's public advertising period, submissions highlighted that planning for the Oakajee Port and Rail and associated infrastructure is progressing and will impact on some areas of the Range north of White Peak Road. There are a number of strategic conservation areas within proximity to the proposed infrastructure development which are already established or being acquired and are of high conservation value (refer map 5). As the Oakajee development progresses, local governments, Landcorp, NACC and DEC should be engaged in the future investigation of this area to assess conservation, recreation and low-key tourism opportunities.

Due to windy conditions, expressions of interest have been received regarding the construction of wind farms. The steering committee has expressed concern regarding the impact of such development on the landscape values. Thorough consideration should be given to the visual impacts of wind farms on the range.

No	Recommendations: resource extraction and infrastructure
50	Minimise and manage the impact of mineral extraction on the landscape, visual and conservation values of the range with reference to the manual, Visual Landscape Planning in Western Australia (DPI, 2007).
51	Address the visual impact of infrastructure and service corridors with reference to the manual Visual Landscape Planning in Western Australia (DPI, 2007) with the following actions: • Set out a means of assessment and management for infrastructure to reduce the visual impact. Infrastructure will include electricity transmission lines, water pipelines, water tanks, telecommunication towers, roads and rail lines.

No	Recommendations: resource extraction and infrastructure
	• Minimise the visual impact of service corridors, such as sensitive design and vegetation screening between the corridor and view locations. • Take into account the future Oakajee-Narngulu infrastructure corridor where it passes through the Moresby Range, with the view to protecting landscape values and minimising its impact on the range.
52	Wind farms (wind turbines) should not be located in areas where visual significance is an issue, including the detailed investigation area.
53	Consider developing environmental offsets based on the impact of major infrastructure on the range and Chapman Valley with reference to Guidance for the Assessment of Environmental Factors, No. 19: Environmental Offsets (EPA, 2006).

4.5.4. Protection of remnant vegetation and revegetation programs

There is a desire within the community to maintain the range's rural amenity, and to conserve and enhance the natural visual landscape of the range ridges and flat tops. The preservation of remnant bushland is important for aesthetic reasons and, in order to retain the conservation value of the range, it is important that revegetation blends in with native vegetation.

No	Recommendations: protection of remnant vegetation and revegetation programs
54	Develop a list of recommended flora species for revegetation to be included in the management plan based on recommendations from the DEC and Department of Water (DoW).
55	Seek opportunities and promote programs that encourage revegetating in a natural pattern. Refer to Guidance for the Assessment of Environmental Factors, No. 6: Rehabilitation of Terrestrial Ecosystems (EPA, 2006)

This strategy considers the issues surrounding land use and development planning for the Moresby Range through examination of community opinion and previous planning strategies for the region. Successful implementation of the strategy requires cooperation between the local shires, recognition and support at the state level, an acceptance of the strategy by the private sector and the community, and commitment by all parties to progress initiatives identified by the recommendations.

5.1. Management Plan for the Detailed investigation area

A key recommendation of this strategy is the development of a management plan for the Detailed investigation area - refer to map 8. The intent of developing a management plan is to more clearly define the objectives and recommendations of this strategy as they relate to the portion of the range identified as having the most development pressure.

The management plan will include an implementation strategy for achieving key objectives for the detailed investigation area, particularly in relating to providing for public access and recreation. It should define areas targeted for future public access and set out means to achieve this, including any necessary land acquisition.

Bringing together the recommendations of this strategy, the following is a number of suggested issues and potential solutions to be considered for inclusion into the detailed investigation area management plan.

Issue	How it can be addressed	Planning tools
Revegetation	Develop a list of recommended flora species for revegetation for inclusion in design guidelines, based on recommendations from the DEC and DoW.	Local planning policies and guidelines.
Cultural heritage	Ensure that areas of cultural significance to indigenous and non-indigenous communities are acknowledged and preserved.	Community consultation.
	Consider developing a heritage trail in the Detailed investigation area. Potential linkages between existing and potential attractions should be included when identifying appropriate routes.	Community consultation.
Public access and recreation	Identify through groundtruthing key areas where future public access may be desirable including any land that may need to be required for a public reserve. Consult with the community and landowners as part of this process.	Spatial mapping; community consultation.

Issue	How it can be addressed	Planning tools
	Determine the approximate cost of buying identified areas for conservation, public access and recreation.	
	Identify existing and potential points for public access, recreation activities (walking trails and guided tours, horse riding trails and riding lessons, bike riding trails, bird watching, hang gliding, astronomy, orienteering, kite flying, wildflower tours, game parks) and public facilities (picnic/BBQ areas, car parking, disabled access, drinking water, ablution facilities, shade, viewing areas/lookouts, interpretive signage including indigenous interpretation areas, campsites, and access roads). Include consideration of land for tourism purposes, such as eco-tourism.	Local planning policies and guidelines; spatial mapping.
	Prepare a plan for land acquisition for State Government consideration, either as part of preparing a region scheme for the Mid West or similar process. Continue to pursue government grant opportunities.	Address through appropriate region scheme processes and Cabinet submissions
Erosion and bushfire management	Develop risk management criteria based on policies implemented by related agencies, such as FESA, to be used in the assessment of development proposals in the detailed investigation area. The criteria should reflect the natural topography, fragile flora systems and volatile farmland environment of the range.	Local planning policies and guidelines.
Preserving landscapes through coordinated management	Consider introducing special control areas for those parts of the Detailed investigation area which have especially high landscape values or are under the most pressure for development. The special control area provisions should consider variations to zoning tables on certain land use activities, including wind farms and basic raw material extraction. Other provisions should make reference to related local policies and guidelines for consideration when determining planning applications in such areas.	Special control area through scheme amendments; state planning policies.
	Introduce policies and guidelines to achieve environmentally responsive development through consideration of architectural features, external finishes, and site location that reflect the existing landscape values of the Detailed investigation area. Reference should be made to the manual, Visual Landscape Planning in Western Australia (DPI, 2007).	Local planning policies and guidelines.

5.2. Responsible authorities

5.2.1. Local government

The strategy provides a framework to guide more detailed local planning strategies and policies. The City of Geraldton and Shire of Greenough (now the City of Geraldton-Greenough) and shires of Chapman Valley and Northampton have been involved in the preparation of the strategy and each shire should seek to incorporate the recommendations into relevant local schemes, strategies and policy documents to facilitate a coordinated approach to decision-making.

Local planning decisions will be the primary instrument through which recommendations of the strategy will be implemented. Implementation will also occur through the review of local planning strategies, local planning scheme amendments, local structure plans, in the assessment of development applications, through commenting on subdivision applications, and the development of guidelines and local planning policies.

It is envisaged that:

- The objectives and recommendations of the strategy will be applied to local planning policy and decision-making across the Moresby Range Management Strategy area.
- Local governments will be able to use this strategy to support grant applications for land management projects.

5.2.2. State government

The WAPC will endorse the strategy as a guide to decision-making on plans and policies within the strategy boundaries. It is expected that state government departments, including the WAPC, DPI, DEC and other relevant agencies, will have due regard to the objectives and recommendations of this strategy, particularly when considering subdivision, development and land clearing applications in the strategy area. There may also be scope for the DPI to contribute to the development of the management plan for the Detailed investigation area.

5.2.3. Landowners and the community

Due to the majority of land within the range being privately owned, landowners play an important role in implementing the recommendations of this strategy. Recommendations have been kept relatively broad, flexible and informal in this regard so they can be adapted to individual landowner requirements and aspirations for their land.

It is necessary to acknowledge that the range is an important community asset and its values should be protected and enhanced. Encouraging existing local community groups to involve themselves in the implementation of the strategy's recommendations, such as through revegetation programs, will enhance public ownership of the strategy, increase the potential for local residents to enjoy the range, and reinforce the range's value as a community asset. Local community groups should be encouraged to assist landowners in revegetation and rehabilitation works.

5.3. Funding and Timeframes

The strategy does not set out specific funding options or timeframes to achieve its recommendations. It is expected that this document will be used to support grant applications and budget allocations by organisations with a role in planning and management of the Moresby Range. Grants may be sourced from the state government and other key agencies for use in establishing local programs. Ongoing negotiation and commitment is required by all parties to reinforce implementation of the strategy's recommendations, and to facilitate collaboration.

A number of recommendations require expert opinion or additional research and funds to implement. It may not be possible to address these recommendations immediately; however, funding opportunities should be sought wherever possible.

Where appropriate, local and state governments should encourage assistance from existing volunteer support, including local community groups and landowners. This approach will provide an economical means to achieve the implementation of recommendations, such as fencing and spot revegetation works, and will encourage and support local ownership of initiatives.

5.4. Land Acquisition and Park Management

This strategy has not set out specific mechanisms for land acquisition or the management of conservation and recreation areas; rather, it encourages local and state planning authorities, as well as corporate organisations, landowners and community groups, to use this strategy to support future funding options for land acquisition and management of conservation and recreation areas where the opportunities arise. Additionally, a number of recommendations highlight areas of conservation significance. This indicates that there are certain areas of land that should be set aside, acquired and managed as regional parks over time.

Moreover, this strategy has established a number of recommendations that can be achieved through standard statutory planning processes, including the subdivision of land and development applications, which will provide the opportunity for additional land area to be added to conservation and recreation reserves.

5.5 Wind farms

In recent years there has been increased interest in the potential establishment of wind farms in the study area. It should be recognised that opportunities for wind farms and other developments are not limited to the study area. The primary focus of the strategy is towards preserving landscape values, and any proposals for wind farms should be considered in this context.

Importantly, the broader community's views on wind farm development has not been determined on this issue. Wind farms in the study area should not be located in visually significant areas, including the detailed investigation area, however, in the advent of an application for such development being received at the local government level the following should be considered:

- Any development proposals for wind farms should ensure comprehensive public consultation occurs to capture community views, understand local issues, and allow public participation in decision-making at the earliest stages. Public consultation should include visual props.
- Any development proposal for a wind farm should be accompanied by a visual landscape assessment as outlined in the Visual Landscape Planning in Western Australia manual (WAPC 2008), where wind farms are specifically addressed on page 129. This assessment should focus on any potential changes to landscape character and should be used to provide the basis for determining whether a proposal is appropriate.
- Issues to be considered are also detailed in Planning Bulletin 67. Guidelines for Wind Farm Development (WAPC 2004), and include siting, design, number of turbines, height, visibility, ancillary development, and access points. Proposals should aim to minimise environmental disturbance, including visual impact and loss of public amenity.

5.6. Monitoring and Review

This strategy is a broad and wide-ranging document designed to be implemented over time. It has been based on existing land uses in the range; therefore, monitoring and review of the strategy is likely to be required when circumstances change.

Monitoring and review will be required primarily at the local government level through the refinement of approaches to land use and development applications, and consequential amendments to local planning schemes, strategies, policies and guidelines relating to the range. Consideration should be given to establishing mechanisms for review that evaluate the success of implementing recommendations so that these matters can be addressed during the eventual revision of the strategy.

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DAFWA	Department of Agriculture and Food, WA
DEC	Department of Environment and Conservation
DIA	Department of Indigenous Affairs
DMP	Department of Mines and Petroleum
DoW	Department of Water
DPI	Department of Planning and Infrastructure
FESA	Fire and Emergency Services Authority
MRWA	Main Roads Western Australia
NACC	Northern Agricultural Catchments Council
WAPC	Western Australian Planning Commission
WRC	Water and Rivers Commission

Acknowledgements

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Kelly Gillen	Department of Conservation and Land Management
Deanne Fitzgerald	Department of Indigenous Affairs
Russell Simpson	Department of Indigenous Affairs
Stephanie Clegg	Department for Planning and Infrastructure
Jane Passarelli	Department for Planning and Infrastructure
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Cr Greg Williams	Shire of Northampton
Cr Wendy Morrell	Shire of Chapman Valley
Cr Eldred Royce	Shire of Chapman Valley
Peter Cole	Shire of Chapman Valley
Ian D'Arcy	Shire of Chapman Valley
Greg Burrows	City of Geraldton
Steve Cope	City of Geraldton
Cr L.W. Graham	Shire of Greenough
Cr Harold McCashney	Shire of Greenough
Tony Turner	Shire of Greenough
Murray Connell	Shire of Northampton
Cr Eric Simkin	Shire of Northampton
Ron Shepherd	Waters and Rivers Commission

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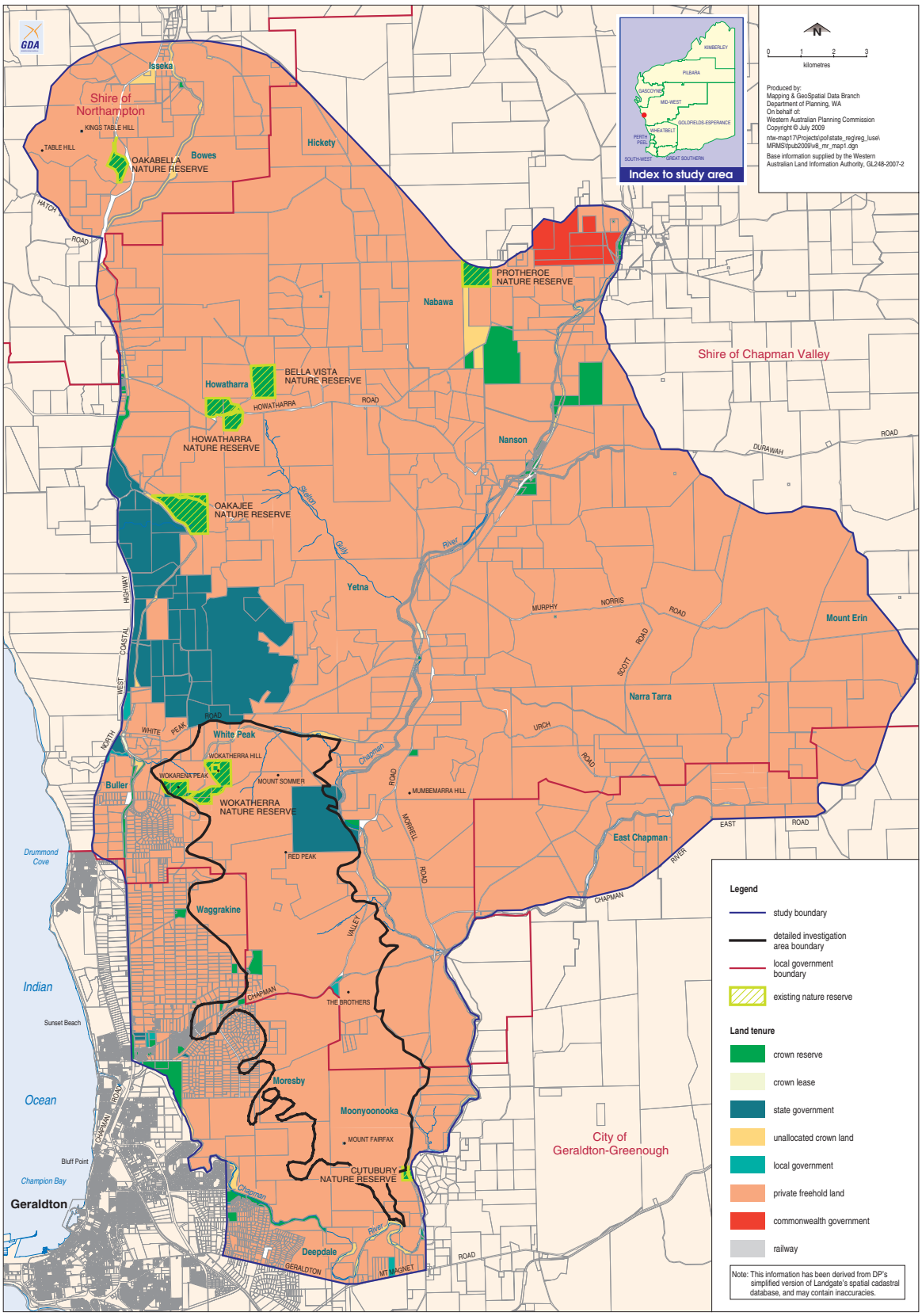
David Rose	Department of Environment and Conservation
Jacqueline McGowan-Jones	Department of Indigenous Affairs
Karen Lane	Department of Indigenous Affairs
Craig Scott	Department of Water
Hamid Mohsenzadeh	Department of Water
Kerry Wray	Department of Water
Alice Brown	Department for Planning and Infrastructure
Jerom Hurley	Department for Planning and Infrastructure
Kirrilee Warr	Shire of Chapman Valley
Ian D'Arcy	Shire of Chapman Valley
Cr Bev Davidson	Shire of Chapman Valley
Cr Peter Cole	Shire of Chapman Valley
Hayley Williams	Shire of Northampton
Cr Gordon Wilson	Shire of Northampton
Cr Owen Simkin	Shire of Northampton
Murray Connell	City of Geraldton-Greenough
Simon Lancaster	City of Geraldton-Greenough

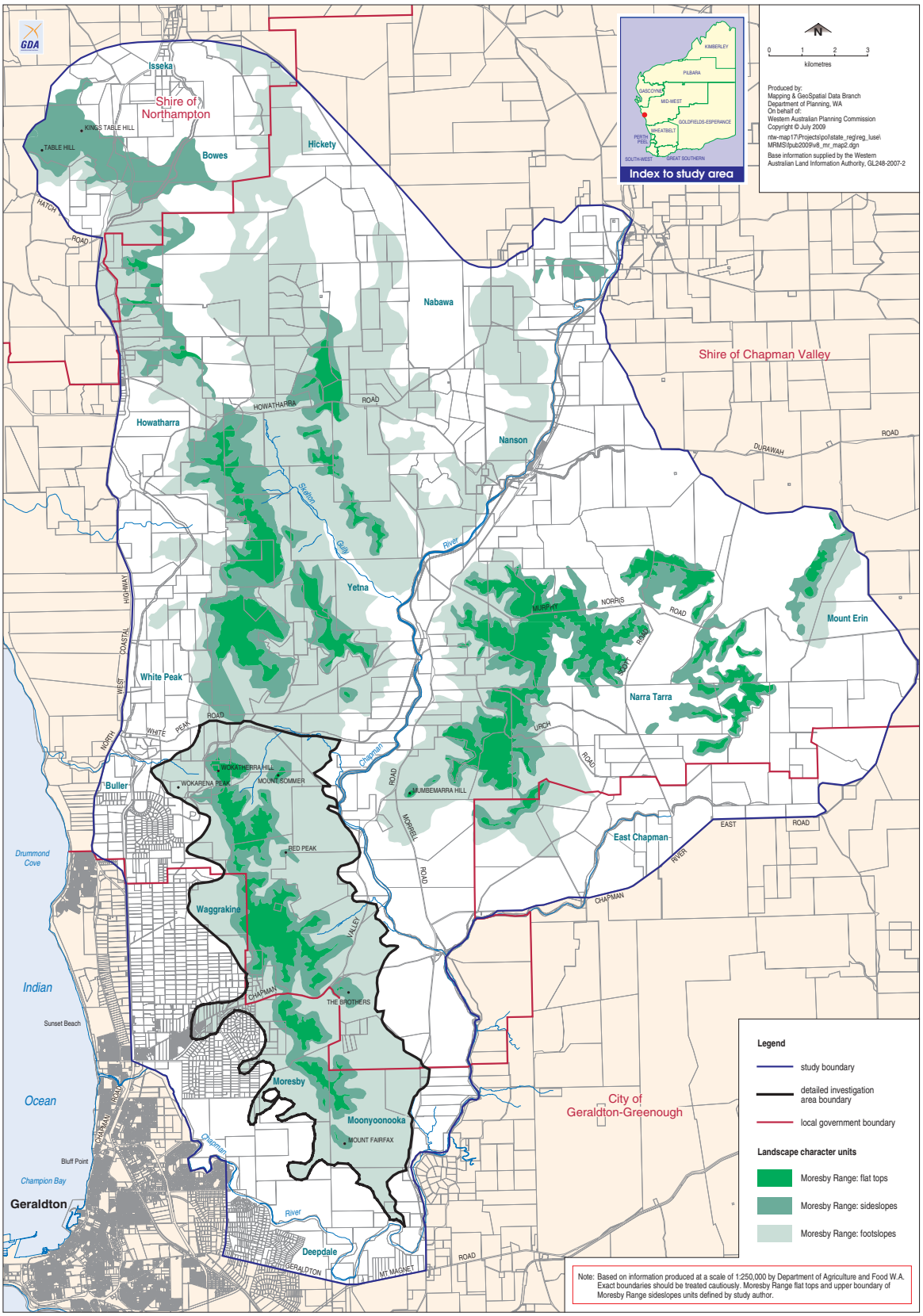
Appendix 1: Maps



Moresby Range Management Strategy

Land tenure

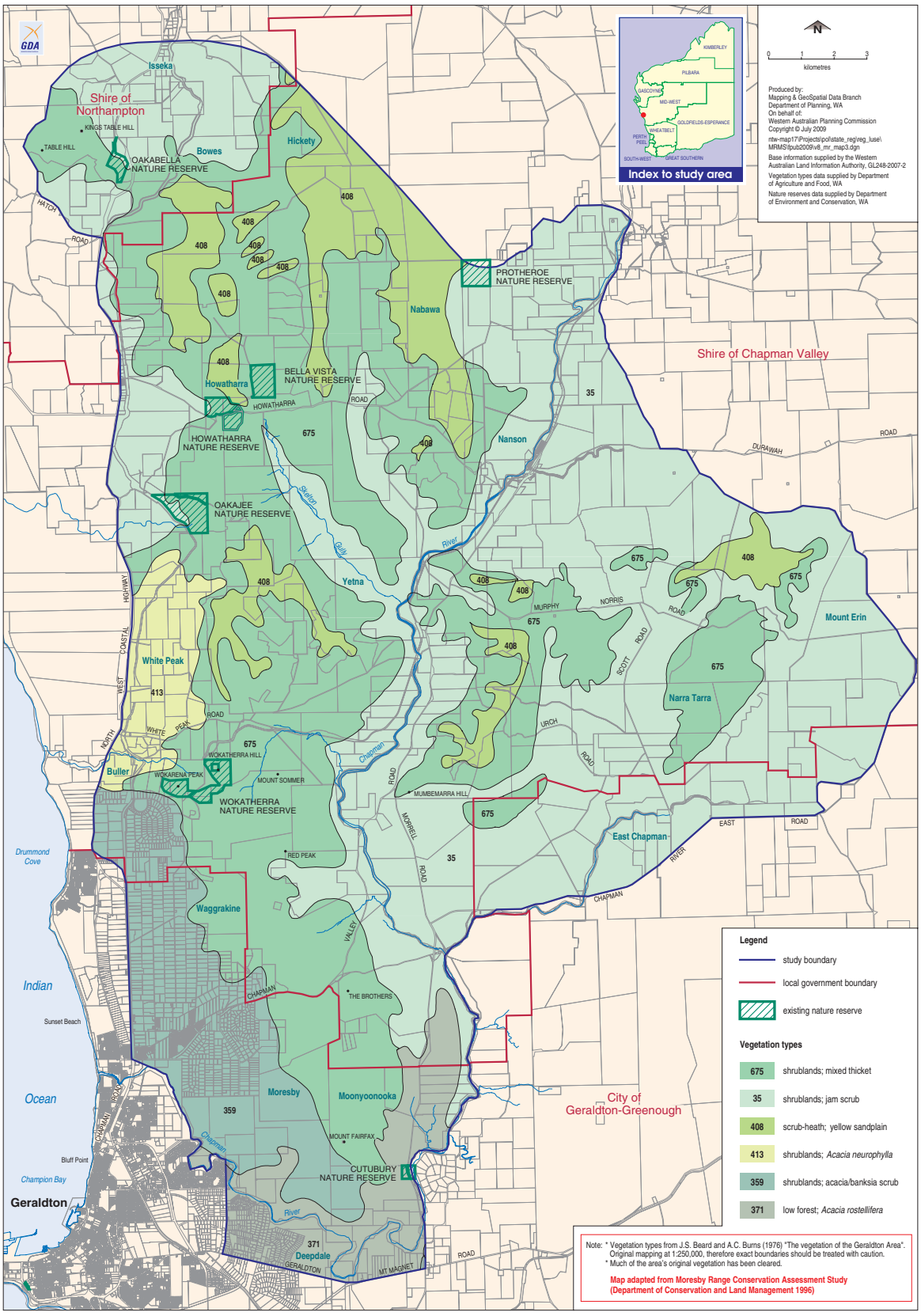
Map 1



Moresby Range Management Strategy

Moresby Range management strategy area

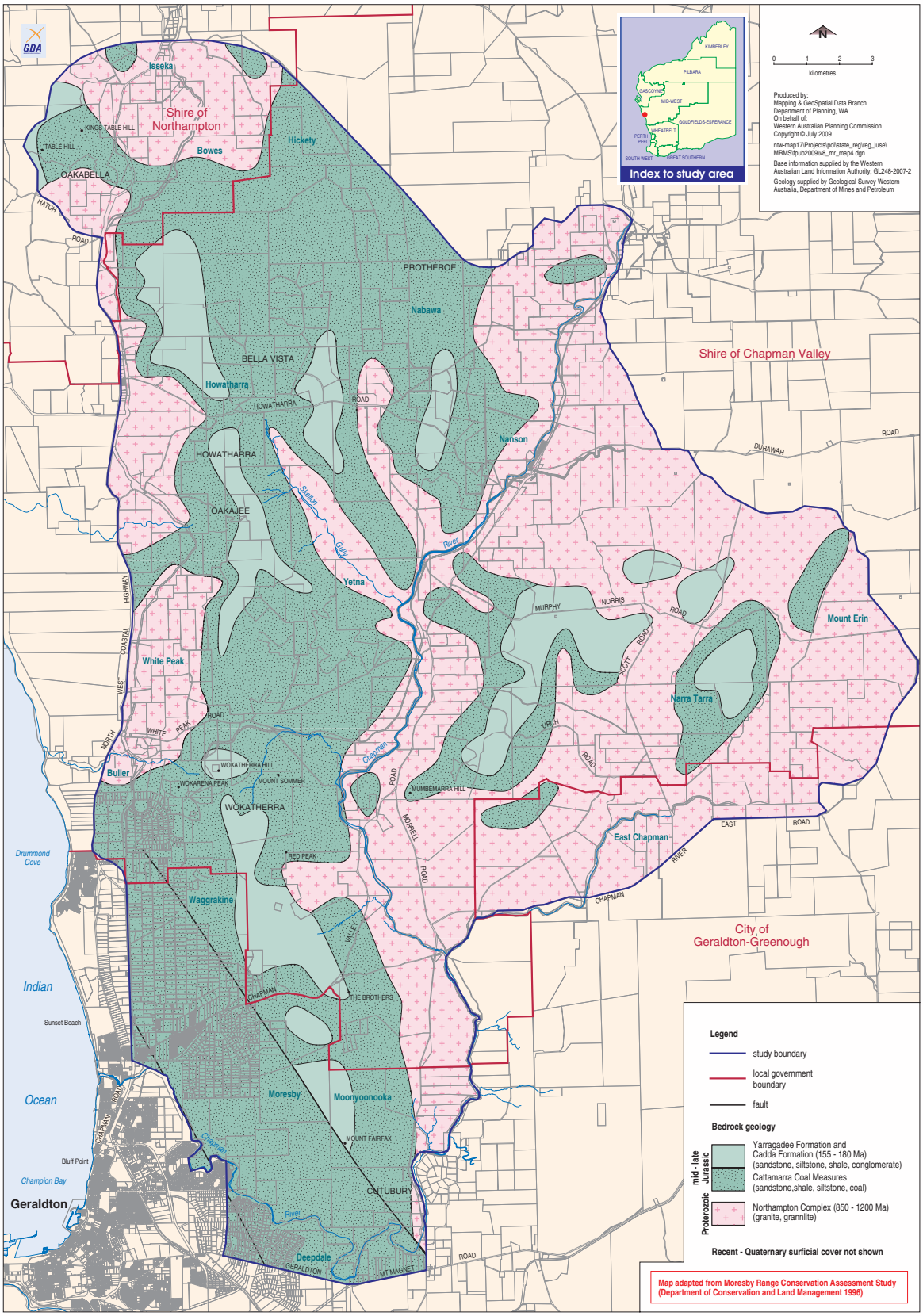
Map 2



Moresby Range Management Strategy

Vegetation types and existing nature reserves

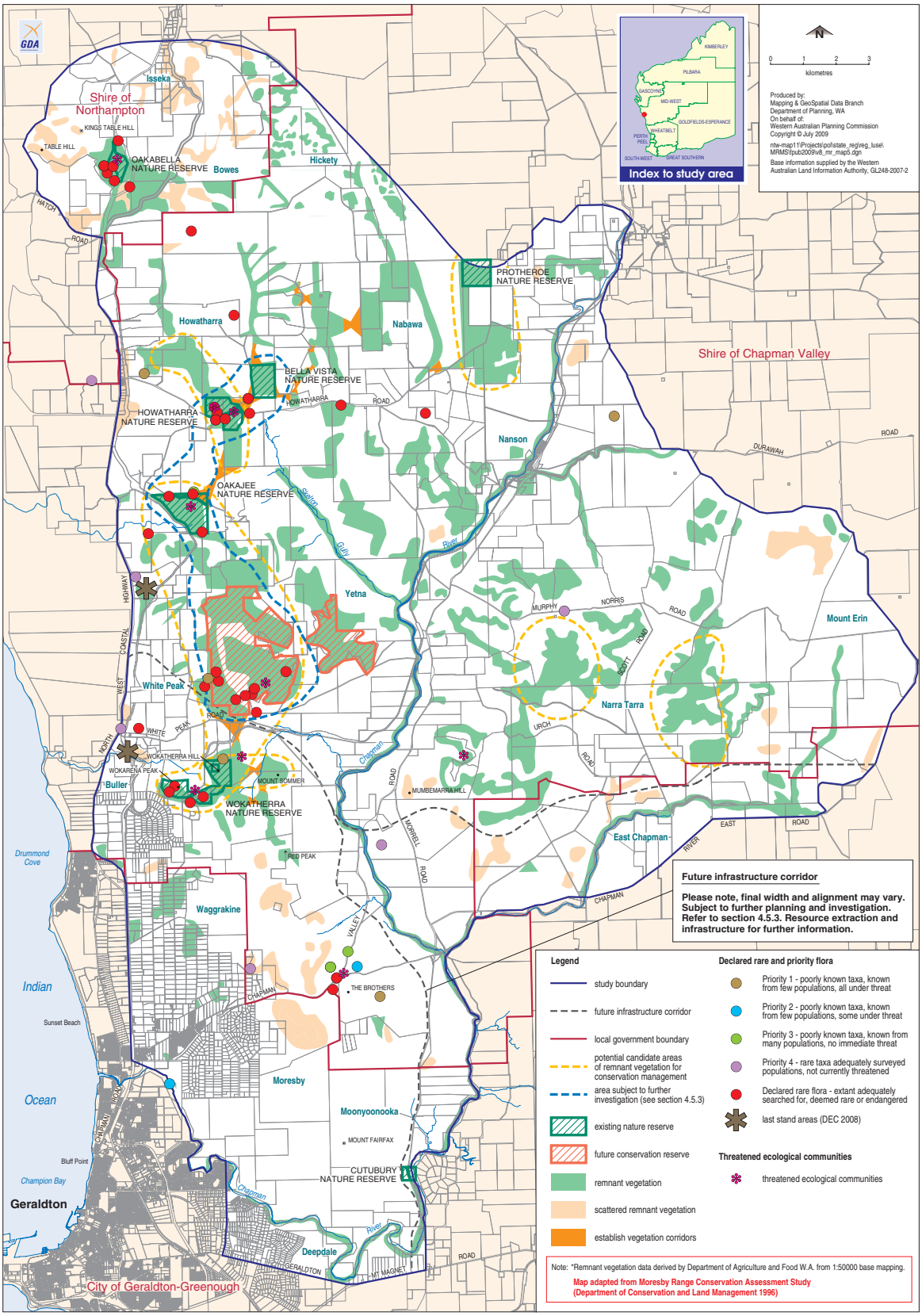
Map 3



Moresby Range Management Strategy

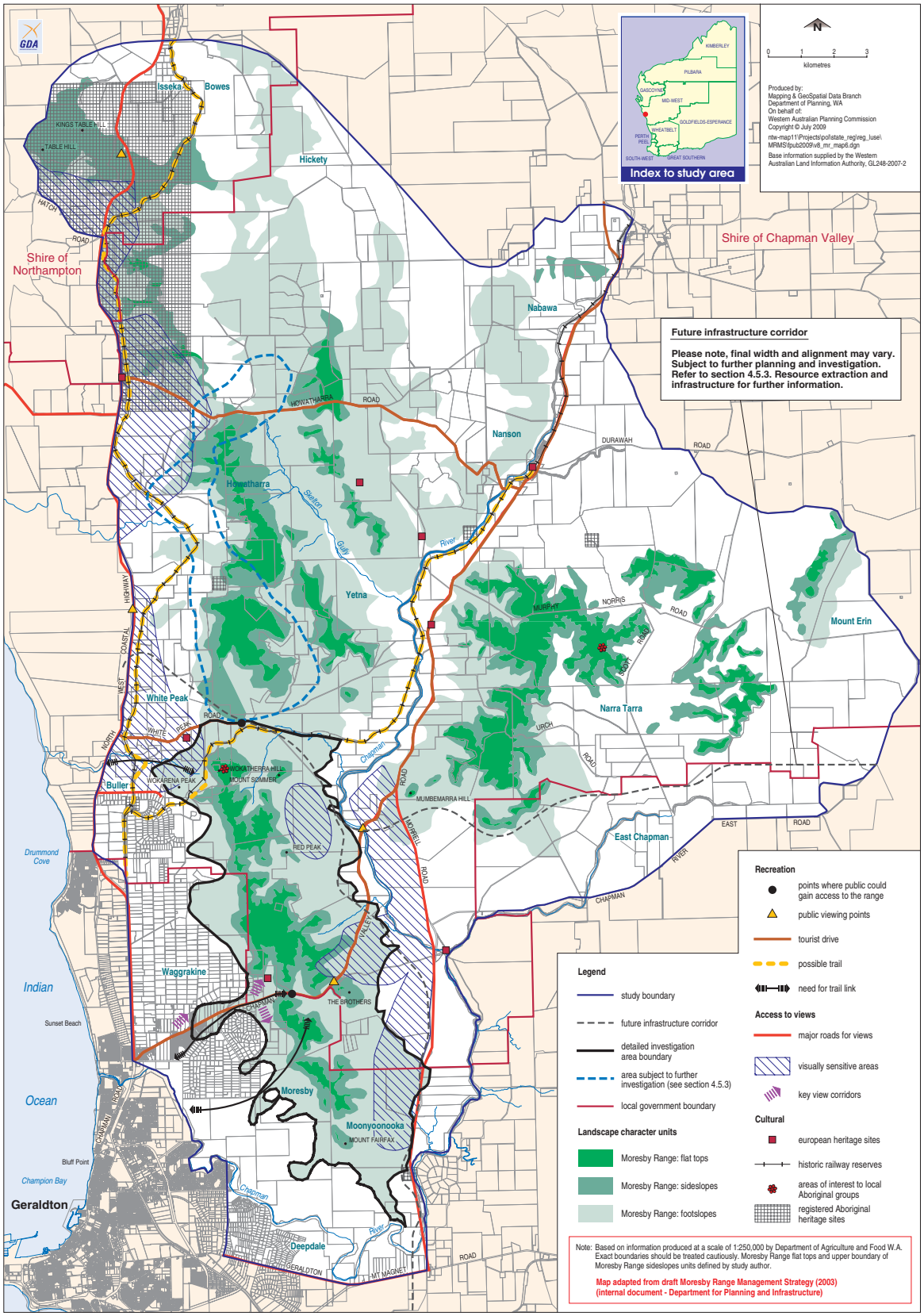
Map 4

Geology



Moresby Range Management Strategy — Map 5

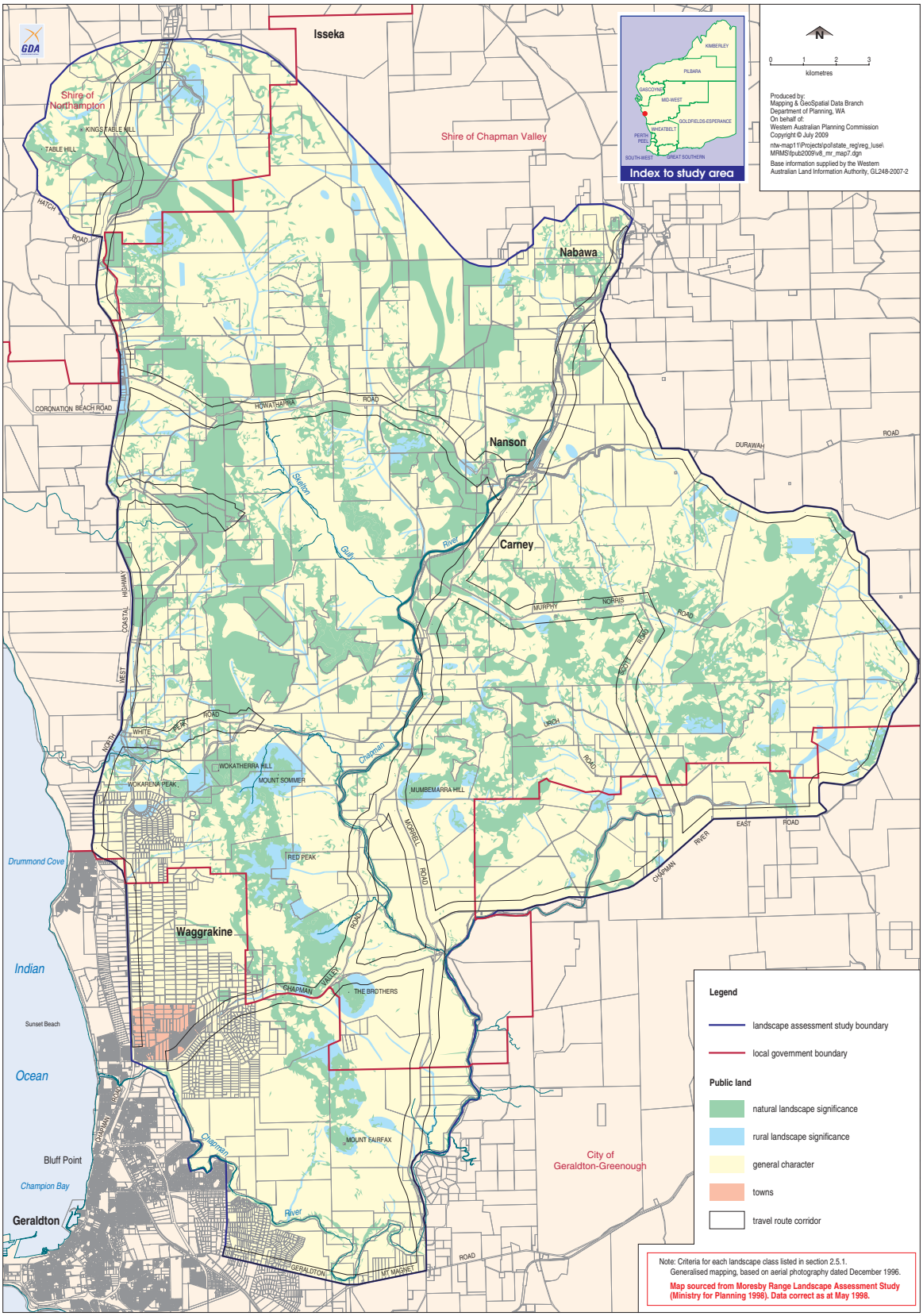
Moresby Range strategy plan: environment and conservation management



Moresby Range Management Strategy

Moresby Range strategy plan: culture, recreation, and access to views

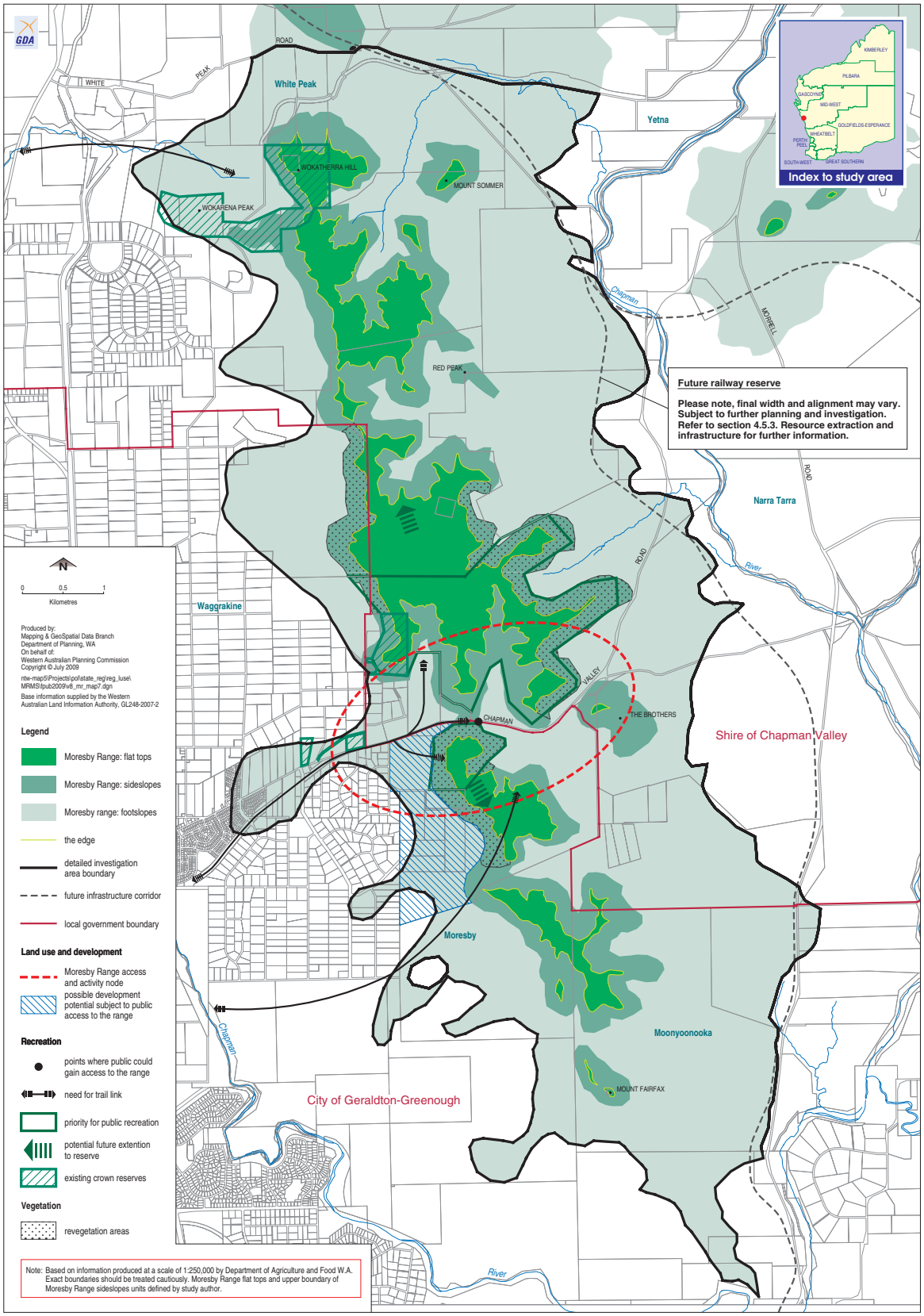
Map 6



Moresby Range Management Strategy

Landscape classes

Map 7



Moresby Range Management Strategy

Strategy plan for detailed investigation area

Map 8