



HANG GLIDERS ASSOCIATION OF WESTERN AUSTRALIA

**HANG GLIDERS ASSOCIATION
OF WESTERN AUSTRALIA INC
PO BOX 146
Midland WA 6936
Ph 9294 3962**

MOUNT BAKEWELL SW LAUNCH ENVIRONMENTAL MANAGEMENT PLAN

PREPARED FOR THE SHIRE OF YORK

ROB HOLMES & ROD MERIGAN

HGAWA SEPTEMBER 2006

INDEX

1.0	INTRODUCTION	1
2.0	FLYING SPORTS IN THE AVON VALLEY REGION	1
3.0	MOUNT BAKEWELL	2
3.1	LOCATION AND VESTING	2
3.2	EXISTING ENVIRONMENT	4
3.3	RARE AND PRIORITY LISTED FLORA	6
4.0	LAUNCHING SITES IN USE	8
4.1	LOU'S LAUNCH	8
4.2	SOUTH LAUNCH	9
4.3	ESE LAUNCH	9
4.4	THE BOWL LAUNCH	9
5.0	SOUTH WEST LAUNCH	10
5.1	SITE DESCRIPTION	10
5.2	SITE ASSESSMENT	14
5.3	IMPACTS AND MANAGEMENT	14
6.0	CONSULTATION	15
7.0	STAKEHOLDER	15
9.0	REFERENCES	15

APPENDIX 1 Reserve Enquiry Detail, Dept Land Information July 2006

FIGURES AND PHOTOGRAPHS

Figure 1	Topographic Chart - York surrounds and Mt Bakewell	5
-----------------	--	----------

Photographs

1	Mount Bakewell	3
2	Paraglider	3
3	Hang Glider	3
4	Mt Bakewell - location of the lots comprising Reserve 17487	5
5	<i>Thomasia montana</i> a Declared Rare Flora	7
6	<i>Senecio gilbertii</i> a Priority 1 Listed Flora	7
7	Aerial Photograph - ESE, Bowl and SW Launch sites	11
8	Aerial Photograph - SW Launch site	11
9	Mount Bakewell SW Launch - looking towards the ridge	12
10	SW Launch Panoramic continuing from LHS Photo 5	12
11	SW Launch - Looking north along the lower edge of the ridge	16
12	SW Launch Typical Sheoak understorey	16

1.0 Introduction.

The objective of this document is to obtain the necessary approvals to enable the Hang Gliders' Association of Western Australia¹ (HGAWA) to re-commission the Mount Bakewell South-West Launch as an approved launching site for foot-launched gliding activities.

Included is a brief overview of land tenure issues and the history and current use of Mount Bakewell by HGAWA members as a flying site. A summary of each of the launch sites in current and previous use by HGAWA members is also provided. Most importantly, a rationale for the requirement for the SW Launch site and an environmental assessment of the proposal to re-commission the site is provided.

This document does not provide an assessment of the use of Mt Bakewell by HGAWA member pilots – the document focuses on the proposed use and management of the South West Launch.

Mt Bakewell is the premier flying location for both ridge-soaring and thermalling activities for both paragliding and hang gliding sports in the Metropolitan and Central Wheat Belt regions. At present, Mt Bakewell only offers launches into south easterly wind directions (from ESE to South). HGAWA has prepared this document as support for a Clearing Permit Application with the aim of re-commissioning the South-West Launch to open up additional flying opportunities for its members.

This document should be regarded as an appendix to draft *HGAWA Environmental Management Plan for Flying Sites in CALM Managed Lands* that provides detail into the regulatory background and status of foot-launched gliding in Western Australia.

2.0 Flying Sports in the Avon Valley Region

The York/Northam region has become the focus of airports in WA. Airports provide a large draw to not only participating pilots, but also adventure tourism and sightseers. The *Avon Valley Aviation Alliance* provides a website with links to various air sport sites including hang gliding, paragliding, micro-lighting, ballooning, sky-diving, fixed-wing gliding and light aircraft aviation. The Shire of York website also advertises airports as an attraction to the region (see Section 6).

Hang glider pilots have utilised Mt Bakewell for launching since 1976; being joined by paragliders when the sport came into popularity with the development of paragliding equipment in the late 80s. Both ridge-soaring and thermalling activities take place after launching from Mt Bakewell.

¹ HGAWA is the body delegated with the responsibility for monitoring hang gliding, paragliding and weight-shift microlighting air sports in Western Australia.

Ridge soaring is where gliders ride the rising air as wind flows like a wave over a hill or mountain. Pilots may fly on this wave for as long as the desired wind strength and direction is maintained.

Thermalling is where pilots fly into and maintain contact with rising thermal air pockets. With sufficiently good weather conditions and skill pilots may achieve heights up to the General Aviation regulated ceiling of 10,000 ft and travel for hundreds of kilometers. Quite commonly, pilots have been able to fly as far as Northam from a Mt Bakewell launch using thermalling techniques.

Flying records for launches from Mt Bakewell include:

- Paragliding: Mike Dufty, February 2003, landing north of Miling over a distance of 168 km.
- Hang Gliding: Ray Chatfield, February 1984, distance of 290 km.

A recent paragliding flight by Rod Merigan in November 2005 achieved a distance of 158 km landing north of Koorda.

3.0 Mount Bakewell

3.1 Location and Vesting

Mt Bakewell (Photo 1) is the highest point of the Dyott Range which is located on the northern outskirts of the town of York, Western Australia (Figure 1). Mt Bakewell lies on the southern edge of the Dyott Range rising to approximately 300 m above the surrounding plain, giving a commanding view of the York township and farmlands beyond. The upper reaches of the range are covered by mostly native vegetation except for the northern part of the escarpment which is privately owned where stock grazing occurs under an intact overstorey.

Mt Bakewell is largely contained within Reserve 17487 which is vested in the Shire of York for the purposes of Parks and Grazing (see Figure 4 and Attachment 1). The reserve consists of:

- | | |
|-------------------|--|
| Lots 29123, 29124 | are leased to Ms K Dorsogna for grazing horses. These consist of cleared grazing paddocks. |
| Lot 29277 | is a road easement between the above two lots. |
| Lot 29141 | is the block that has the South and ESE Launches on it; currently leased to Mt Bakewell Stud. The block extends from North Road in the south east to the edge of the escarpment on the north west of the block and consists of an open parkland of trees on grazed undergrowth on the slopes of Mt Bakewell. |
| Lot 29140 | is the main reserve on top of Mt Bakewell with small areas leased for telecommunication facilities. This Lot consists of mostly undisturbed native vegetation except for the access tracks to the communications towers, related parking area and the areas occupied by communications infrastructure. Access to the South and East-South-East launch sites is via established vehicle tracks on this Lot. |



Photo 1. Mt Bakewell; looking approximately ENE along the Dyott Range. The communication towers are located on the highest point. *By Mike Dufty*



Photo 2: Paraglider *By Rob Holmes*



Photo 3: Hang glider *By Rob Holmes*

The configuration of the Lots comprising Reserve 17487 is shown in Photo 4 together with the launch sites (see Section 4 below).

A summary of Mount Bakewell Land Tenure is as follows:

<i>Land Tenure:</i>	Reserve 17487
<i>Current Purpose:</i>	Parklands and grazing
<i>Notes:</i>	With power to lease for any term not exceeding 21 years subject to the consent of the Minister for Lands.
<i>Current area:</i>	133.6 ha
<i>Current Vesting:</i>	Management Order Shire of York
<i>Responsible Agency:</i>	Dept for Planning and Infrastructure
<i>Reserve Comprises:</i>	Lots: 2913, 29124, 29140, 29141, 29277 on DP218541 (J280896) Location: Avon Loc 22302

3.2 Existing Environment

Patrick (1997) has reviewed the extant knowledge of surface soils, geology and known plant species occurring on the Mt Bakewell reserve.

The summit of Mt Bakewell is composed of massive quartzite, which is resistant to erosion and forms areas of high relief. A quartzite-feldspar-biotite gneiss is exposed on the southern and western slopes (Wilde & Lowe 1978) where the Bowl and SW launches are located.

Patrick continues: “The quartzite gives rise to soils which support Wandoo (*E. wandoo*) woodland, while York Gum (*E. loxophleba*) woodlands occur on the more basic soils of the gneiss, which are fertile red loams, some of which are high in the landscape. The sandy areas support a species-rich heath and shrubland, and there are woodlands of Rock Sheoak (*Allocasuarina huegeliana*) on many of the lower slopes”.

The vegetation of the Reserve remains in good condition as there is no open public access. Hang and paraglider pilots represent a small group who limit their access to Mt Bakewell for transit to approved launching sites located on privately managed land adjacent to Lot 29140. A Code of Conduct promulgated through flying clubs is required to be observed by pilots who use launching sites on private or public land. Day to day access is only achieved through permission of a private landowner. Other visitors to Mt Bakewell include technicians occasionally servicing the telecommunications facilities located at the summit. Occasional walking groups gain access to Mt Bakewell by climbing up the slope through Reserve land. The River Conservation Society have made several trips to Mt Bakewell to conduct an ongoing assessment of the native bushland of the reserve.

Adjacent blocks to the north and west of Lot 29140 Reserve 17487 are privately owned. These consist mostly of undisturbed bushland not used for agriculture or grazing as these blocks contain plants poisonous to stock. This land, clearly visible in Photo 4, adds considerable conservation value to the adjacent Reserve.

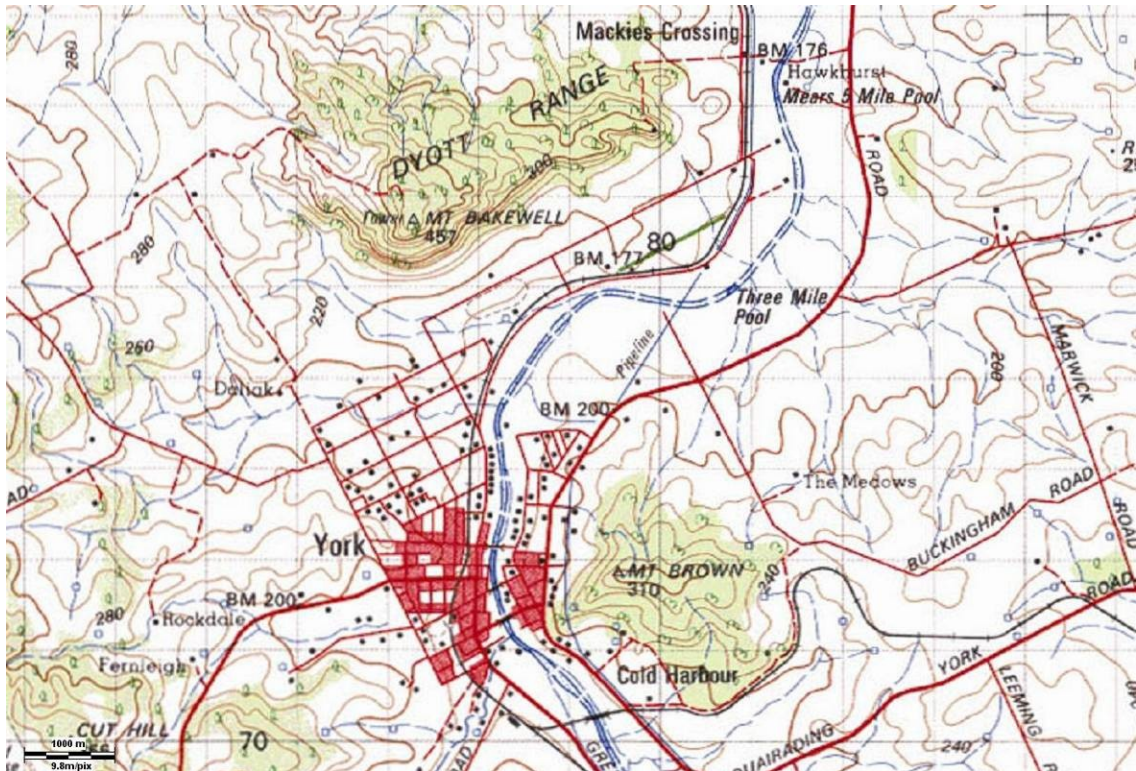


Figure 1. Topographic chart of York locality showing Mt Bakewell on the northern end of the Dyott Range. North is up.

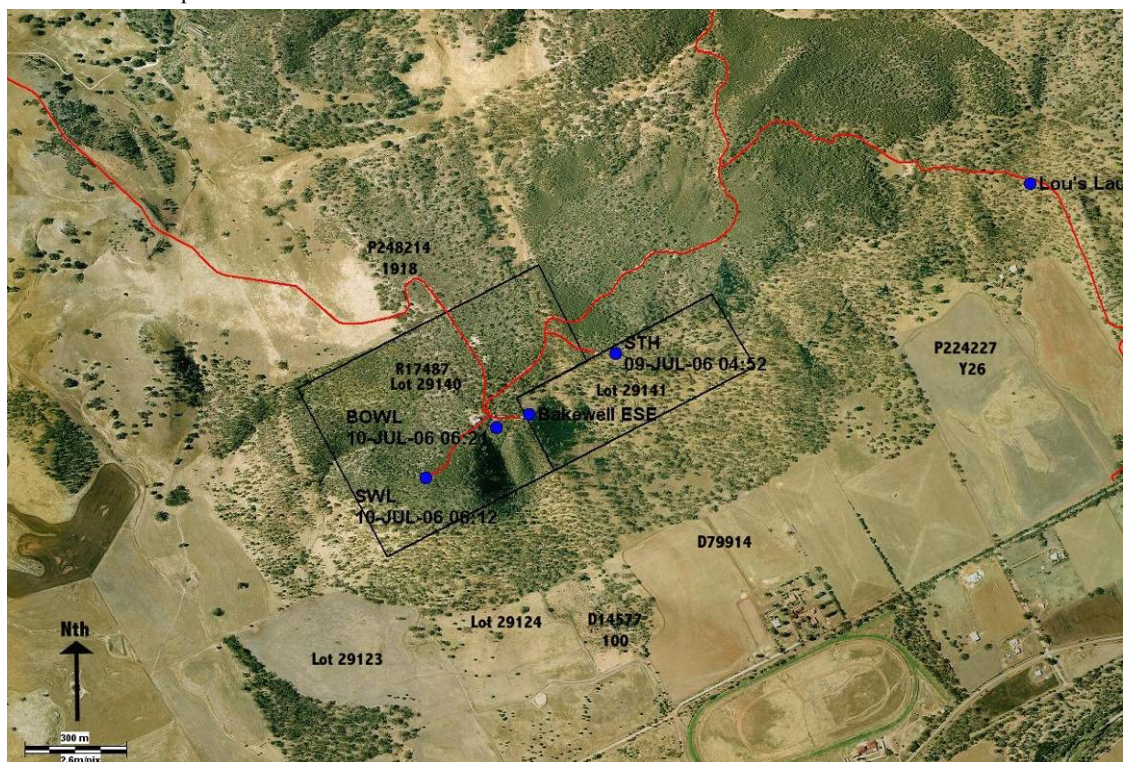


Photo 4. Mt Bakewell and surrounds showing location of the lots comprising Reserve 17487. Lot delineation in black; access tracks/roads in red; launching sites shown in blue. North is up.

3.3 Rare and Priority Listed Flora likely to be found on the Dyott Range

According to Patrick (1997), the remaining natural vegetation on the Dyott Range is an important remnant of the original bushland that covered the hills before much of this was removed or modified for agriculture. According to Patrick there are extensive areas of undisturbed natural vegetation which have not been fully surveyed. Nevertheless, Patrick lists 108 species for Dyott Range including one Declared Rare Flora (DRF), one Priority 1, and three Priority 4 species. The current status of DRF and Priority Listed Flora listed by Patrick has been confirmed using Florabase (see Section 6.0) and the *Wildlife Conservation (Rare Flora) Notice (2006)* (WA Government Gazette, 23 June 2006).

Declared Rare Flora: These are taxa which have been adequately searched for and are deemed to be in the wild, either rare, in danger of extinction or otherwise in need of special protection.

Thomasia montana is listed as a DRF taxon (Photo 5). It is an upright shrub, 0.5 – 1 m high; flowers are blue to purple and red, appearing September to October. The species prefers loamy soils found on rocky granite knolls and lateritic hills. The species is known to occur further south in the Beverley to Pingelly area (Patrick 1997).

Priority 1: These are taxa which are known from one or a few (generally < 5) populations which are under threat. Such taxa are under consideration for declaration as “rare flora” but are in urgent need of further survey.

Senecio gilbertii is a Priority 1 listed taxon (Photo 6). It is an erect, slender perennial herb, growing to 1.5 m. Flowers are yellow and appear September to November. The species prefers peaty sands found in swamps and slopes. The species has been collected in the past from three locations in Jarrah forest between Bindoon and Woorooloo. The population at Mt Bakewell is the most easterly known for the species and is the only currently known population as it has not been refound recently at other locations (Patrick 1997).

Priority 4: These are taxa considered to adequately surveyed and while being rare, are not currently threatened by any identifiable factors. The following are listed as Priority 4 taxa:

Caladenia integra: This is an orchid found to be represented by a large population in the Sheoak woodland burned in the 1985 fire. The species has been found to be quite common, occurring in Rock Sheoak woodlands around granites. Florabase describes the species as a tuberous, perennial herb, 0.2 – 0.5 m high. Flowers are green and red; appearing September to October. The species prefers Clayey loams on granite outcrops and rocky slopes (Patrick 1997).

Hemigenia platyphylla: A low shrub where the type species is represented by a large population around the summit of Mt Bakewell. Florabase describes the plant as a low spreading shrub, 0.2–1.5 m high. Flowers are blue to purple and appear September to November. The species prefers sandy and loamy soils on granite rocks and slopes. The species is known from the Sterling Range with isolated records from Dwellingup, Harvey River, and West River (Patrick 1997).



Photo 5. *Thomasia montana*, a DRF species located on the Dyott Range
from Florabase, by SJ Patrick²



Photo 6. *Senecio gilbertii*, a Priority 1 species located on the Dyott Range
from Florabase, by SJ Patrick²

² Images used with the permission of the Western Australian Herbarium, DEC.

Hibbertia montana: This is a low shrub found around the summit and upper slopes of Mt Bakewell. This is an erect, straggling or sprawling shrub, 0.1 – 0.7 m high. Flowers are yellow and appear from July to October. The species prefers loam over granite, lateritic soils, gravel on granite rocks, lateritic ridges and boulders, hills. Populations have been found at other localities in the Central Wheatbelt during a survey for the species in 1983 (Patrick 1997).

4.0 Launching Sites

Foot launching a glider requires a steady breeze at approximately right angles to the slope of the hill on which the launching site is located; an open area of at least 20 m width is required to manoeuvre a wingspan of approximately 10m. Altogether, where there is tall surrounding vegetation, an open area of about 400 m² is required for a launch site. Mt Bakewell provides five such sites. One of these, the “Bowl” is now closed as it is regarded as hazardous; Lou’s has manageable hazards associated with it and the South West Launch is currently closed due to encroaching vegetation as it has not been maintained over the years.

All of the Mt Bakewell launching sites, either in use or closed, are shown in Photo 4. Use of these is only achieved by both long-term approval and day-to-day contact with the landholder whose property is traversed for access. Furthermore, launching from Mt Bakewell South and ESE launches are only achieved with the permission of the lessee of the land on which launch sites are located.

4.1 Lou’s Launch

This launching site is on privately owned grazing land overlooking the farm homestead of Mr Lou Kosta; hence the name. The site is an open grassed area surrounded by an open parkland of trees on grazed undergrowth. The site overlooks power lines, domestic structures, farmyards and machinery laydown areas. Consequently, this launching site could be hazardous for inexperienced paraglider pilots. The site does not represent a risk to hang glider pilots due to the extended gliding range of these aircraft and consequently may be used by novice hang glider pilots who have received appropriate site induction. Due to the associated hazards and limited altitude of the launch, the site is not very popular for launching except in strong wind conditions when it is favoured by hang glider pilots.

<i>Lou’s Launch Location:</i>	478 930E 6 476 616N and height 318 m amsl.
<i>Land Tenure:</i>	On private land
<i>Launch Direction:</i>	SSE to South.
<i>Site Rating:</i>	Intermediate-rated paraglider and novice hang-glider pilots with site introduction from advanced-rated pilots.
<i>History of Site Usage:</i>	The launch site has been in use since 1976
<i>Landing Site:</i>	On open farmland to the south of the launch

4.2 South Launch

Located on grazed land on the upper (north western) boundary of Lot 29141 on the eastern perimeter of the escarpment. Access is via a road through private land and then along a road through Lot 29140. The launch site is an open grassed area with an open parkland of trees on lower slopes and adjacent areas. This site is favoured for South to SE launches due to its height above ground level and low-risk rating for launching.

<i>South Launch Location:</i>	477 746E 6 476 081N
<i>Land Tenure:</i>	Lot 29141 within Reserve 17487.
<i>Launch Direction:</i>	SE to South
<i>Site Rating:</i>	Novice-rated pilot with advanced-rated pilot site induction.
<i>History of Site Usage:</i>	The launch site has been in use since 1976
<i>Landing Site:</i>	On open farm land to the north of the launch owned by Mr L Kosta, the gravel pits and paddocks of Mt Bakewell Stud below.

4.3 ESE Launch

Located on the upper boundary of Lot 29141 on the eastern perimeter of the Mt Bakewell escarpment. Access is as for the South Launch via a road through Lot 29140. The launch site itself is on an open grassed area with an open parkland of trees on lower slopes and adjacent areas which are used for stock grazing. The surface of the launch itself is stabilized with rubber conveyor belt sections laid across the site.

<i>ESE Launch Location:</i>	477 548E 6 475 900N and 452 m amsl
<i>Land Tenure:</i>	Lot 29141 within Reserve 17487
<i>Launch Direction:</i>	E to SSE
<i>Site Rating:</i>	Novice with advanced-rated pilot site induction.
<i>History of Site Usage:</i>	The launch site has been in use since 1971
<i>Landing Site:</i>	On open farm land to the north of the launch owned by Mr L Kosta, the gravel pits and paddocks of Mt Bakewell Stud below

4.4 The Bowl Launch

This site is now closed for glider launching. Club Senior Safety Officers consider this to be an unsafe launching site due to often unexpected turbulent wind conditions that may be encountered after take off. The Bowl Launch is located on the southern edge of Mt Bakewell overlooking a deep valley ("The Bowl") incising the southern face of Mt Bakewell.

<i>Bowl Launch Location:</i>	477 450E 6 475 863N
<i>Land Tenure:</i>	Lot 29140 within Reserve 17487
<i>Launch Direction:</i>	Site Closed
<i>Site Rating:</i>	Closed

<i>History of Site Usage:</i>	The launch site was in use between 1976 and 2000
<i>Landing Site:</i>	Not applicable

The launch is on an open bare quartzite gravel area largely devoid of groundcover due to the shaded position and hard gravelly substrate. The launch area is reasonably stable but could be subject to erosion over time. HGAWA intend to rehabilitate this site. If permission is obtained to re-commission the South West Launch, any brushwood removed from that site will be used for rehabilitation on the Bowl Launch. Brushwood and any available trunks will be pegged down over the site. Re-seeding will take place by carefully re-distributing understorey leaf litter from adjacent areas – taking care not to damage vegetation or create new areas that could erode. Further advice on rehabilitation will be sought from the Department of Environment and Conservation at appropriate times.

5.0 South West Launch

5.1 Site Description

<i>SW Launch Location:</i>	477 240E 6 475 708N and 426 m amsl 31° 51.244S 116° 45.564E
<i>Land Tenure:</i>	Lot 29140 within Reserve 17487
<i>Launch Direction:</i>	West to South West
<i>Site Rating:</i>	Presently closed.
<i>History of Site Usage:</i>	The launch site was in use by hang glider pilots from 1976 to about 1995
<i>Landing Site:</i>	On open farmland on the plain below – with permission of landowners.
<i>Soils</i>	Shallow quartzite gravels over rocky outcrops.
<i>Vegetation</i>	Rock Sheoak woodland to 4m

This site was previously used by hang glider pilots, but due to the distance from the communications facility car park, the site fell into disuse and has been subject to re-growth which would presently make the site unsuitable for glider launching. However, HGAWA is keen to see the site re-opened for use by paraglider pilots who are able to carry their gliders and associated equipment, amounting to a 13 kg backpack, over the distance. The site may be used by those hang glider pilots who can muster help in carrying their folded aircraft over the distance to the launch.

The site presently consists of an open area (Photos 8 and 9) of about 250 m² of exposed rock and shallow quartzite gravel over rock sloping towards a quartzite ridge (Photo 9). The calibration arrow in Photo 8 is an approximation indicating 10 m. An accurate measurement using a tape measure on the ground, between the line of vegetation and the edge of the ridge along the imaginary line of the arrow superimposed in Photo 8, returned a distance of 16 m.

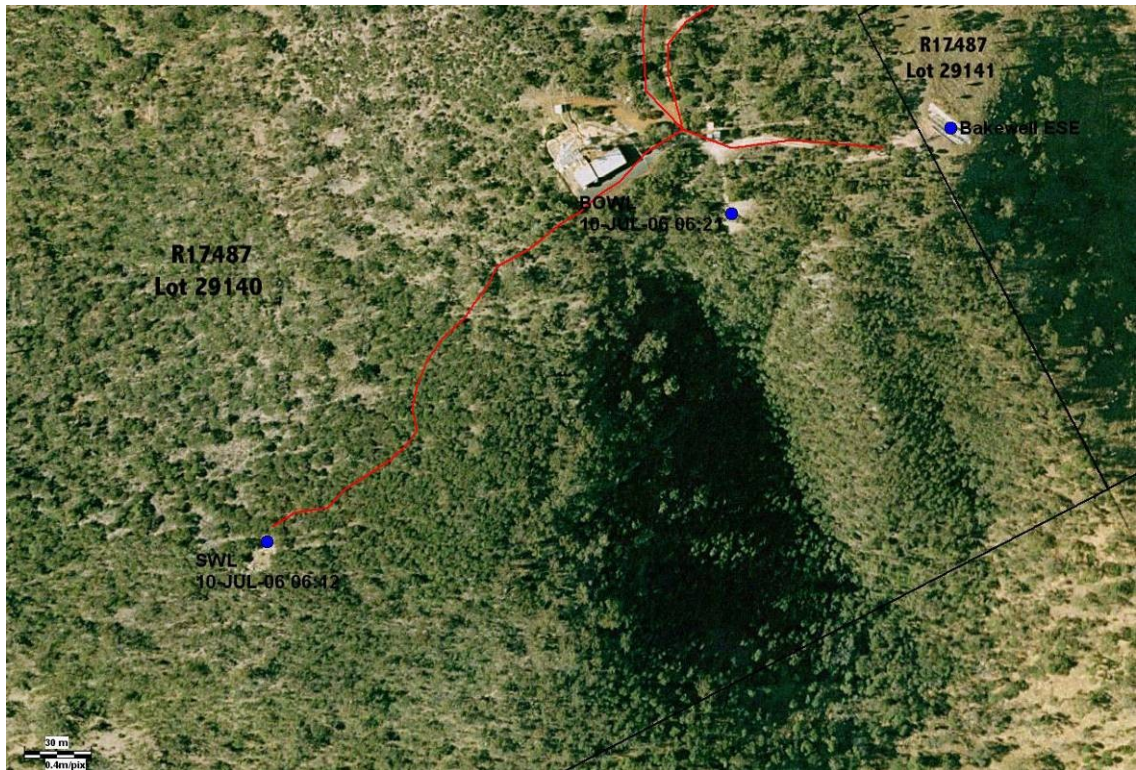


Photo 7. Aerial Photograph. ESE, Bowl and SW Launch sites. Red lines indicate access tracks and roads. Blue dots are the launching sites.



Photo 8. Aerial Photograph SW Launch site. Red box: area to be trimmed; Black lines: area to be cleared; Heavy black arrow is preferred SW take-off direction. *By Rod Merigan.*



Photo 9. The Mt Bakewell SW Launch looking toward the ridge. *By Rob Holmes*



Photo 10. Panoramic continuing from RHS on Photo 9 above, showing typical Sheoak overstorey on the adjacent slopes of the open area
By Rob Holmes

The open area of the SW Launch is surrounded on hill slopes on either side and above by a Rock Sheoak woodland (Photo 10). These typically have stems to about 12 cm in diameter and vary in height to about four metres. The understory consists of a dense mat of Sheoak pine-needle with occasional and sparse groundcover (Photo 12). Although there has been good summer rainfall and rains prior to the site visit on 30 July 2006, there was little sign of any new groundcover emergence.

Below the ridge (Photo 11) there is a mixed overstorey of Sheoak and Eucalypt saplings including York (*E. loxophleba*) and Marri (*E. callophylla*) Gum, rising into view in front of the launch site (Photo 9).

A vegetation survey of the South West Launch site was conducted by volunteer members of the River Conservation Society on Sunday 10 September 2006. On the day of the survey, it was noted that there was a proliferation of flowering perennials and woody shrubs on the open area of the site itself. However, apart from new fern growth, there was little evidence of perennials or woody shrubs in the Sheoak understory. Samples of all flora on the site were taken for pressing and later identification by the River Conservation Society. One of the authors (RH) took photographs of one of each species that was flowering on the day.

At the time of the flora survey there was no evidence of the presence of *Caladenia integra*. Because the Sheoak woodland surrounding the SW Launch is a preferred habitat for *C. integra* (Patrick, 1997), one of the authors (RM) revisited the SW Launch to conduct a search for this species on 27 September 2006. A flowering specimen was found approximately 20 m behind the launch site in Sheoak woodland. A photograph was taken and was used for positive identification against the photograph available on WA Herbarium website - *Florabase*.

Subsequently, because the results of the Flora survey were not made available, *RM* once again visited the site on 28 September to take a photograph of each different type of flower appearing on or adjacent to the site and a photograph of its associated plant. These are available for inspection. It was noted that different species had come into flowering in the intervening period.

5.2 Proposed Works

As stated in Section 4.0, approximately 400 m² is required for a launch site which would require an expansion of the existing open area by 150 m².

Photo 8 gives an indication of the work that needs to be done to re-commission the site. The existing open area, which has an area of approximately 250 m², needs to be expanded to the rear by about 2 m and to the north by about 5 m; altogether, about 150 m² (measured out by tape) which would include the removal of about 35 Sheoaks and two Marri. The area in front of the launch (red box, Photo 8) needs to have all trees (Eucalyptus saplings, including Marri and York Gum, and Sheoak) to be trimmed just below the level of the ridge to ensure an unobstructed passage for pilots when launching.

As with any launching site, car parking facilities are required. For the SW Launch the closest and only available parking area is that already available for the Mt Bakewell communications facilities.

The original pathway between the communications-facility car park and the SW Launch is now difficult to follow due to branching pathways leading off the main footpath created by Kangaroos. This footpath will need to be clearly defined.

5.3 Impacts and Management

Soil Erosion: Removal of the Sheoak on the margins of the existing site could cause soil erosion with the loss of tree roots and overlying litter. HGAWA intends to stabilise and even the surface of the site using available loose rock on the site and any available soil. To prevent soil erosion, any areas with a potential for erosion will be reinforced at the periphery of the launch site using Sheoak trunks that have been removed in the expansion of the site. HGAWA intend to cover the site with an artificial surface to increase substrate stability for safety reasons – which will also minimise the risk of soil erosion occurring. However, advice will be obtained from the District DEC office at Northam in this regard.

Loss of vegetation: The loss of approximately 35 Sheoak over an area of about 150 m² and one Marri sapling will have little or no impact on the long-term viability of the surrounding Sheoak woodland because Sheoak woodland presently covers extensive areas on Mt Bakewell. The open area on the SW Launch is presently subject to regrowth by woody shrubs and perennials. As an offset to the loss of these shrubs and perennials, HGAWA intends to rehabilitate the Bowl Launch site (See *Bowl Launch* Section 4.0 above).

Possible loss of Caladenia integra habitat: The identification of a *C. integra* specimen in Sheoak woodland near the launch site indicates that the area proposed for removal of 35 Sheoak is habitat for *C. integra* – a Priority 4 listed species. Furthermore, the pathway between the communications centre car park and the SW Launch is through at least 50 m or more of Sheoak woodland. In this respect, it should be noted that the Sheoak woodlands have extensive representation on Mt Bakewell, thus the removal of 150 m² of Sheoak woodland would result in a very small impact on the available habitat of *C. integra* (Unfortunately HGAWA do not have the resources to map the percentage representation of each habitat type on Mt Bakewell; the view expressed is based on knowledge of the location). The footpath to the SW Launch site was established when this site was in previous use, and apparently has been maintained by Kangaroos, as the pathway can still be followed. Consequently the use of the footpath will not represent an adverse change to the existing vegetation habitats.

Fate of removed shrubs/trees: Available Sheoak and Marri brushwood removed for expanding the SW Launch will be used for rehabilitating the Bowl Launch. Trunks of trees removed will be used to stabilise the SW Launch and any remaining will be used on the Bowl Launch or for other areas that may require stabilization to minimize or prevent erosion.

Site Access: An access footpath from the communications car park to the SW Launch is required. Although the original path can still be discerned, it is now difficult to follow as

Kangaroos use the pathway to access the SW Launch to sun themselves in the late afternoon; they have created several branching pathways in various directions (pers. obs by RM). To ensure minimal damage to vegetation, the original footpath will be marked with surveyor's tape. No clearing or vegetation removal will be required for re-establishing the pathway apart from cutting some branches back on shrubs and trees that will remain otherwise undisturbed.

5.4 Consultation

Advice was sought from the River Conservation Society members regarding desirable environmental practices to be followed for clearing and restoration activities. The suggestions received have been included in this document.

The DEC Northam District office has been consulted in the preparation of this document.

5.5 Stakeholders

The table below includes relevant stakeholder contact detail..

Organisation	Contact	Position	Telephone
Hang Gliders Association of WA (Inc)	Mr R William	President	9294 3962
Cloudbase Paragliding Club of WA (Inc)	Mr R Merigan	Vice President	9641 2189
River Conservation Society (Inc)	Dr C Howell	Secretary	9631 1842
Shire of York	Mr R Hooper	CEO	9641 2233
Dept Conservation & Environment	Mr A Kietzmann	District Mgr Northam	9622 8940

6.0 References

HGAWA. (2005). HGAWA Environmental Management Plan for Flying Sites in CALM Managed Lands. HGAWA Perth.

Patrick, S.J. (1997). Mount Bakewell, an important remnant vegetation in the York area. CALM Science. Vol 2/3 pp225-230.

Wilde, S.A. & Lowe, G.H.(1978). 1:250 000 Geological Series Explanatory Notes. Geological Survey of Western Australia, Perth WA.

Websites

Avon Valley Aviation Alliance: <http://www.avonaviation.org.au/>

Florabase: <http://florabase.calm.wa.gov.au/>

HGFA Operations Manual: <http://www.hgfa.asn.au/>

Shire of York: <http://www.york.wa.gov.au/>



Photo 11. Looking north along the lower edge of the ridge at the edge of the SW Launch. *By Rob Holmes*



Photo 12. Typical Sheoak understorey adjacent to the SW Launch Site. *By Rob Holmes*

Appendix 1

Reserve Enquiry Detail, Dept Land Information July 2006

