

Forests NSW

Planning and Building Mountain Bike Tracks on State Forest

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1. Introduction

Recreational activity on State forest that constructs and uses purpose built tracks creates disturbance and has the potential to cause environmental damage. Activities include, but not exclusively, bushwalking, mountain bike riding, motorbike riding and horseriding.

Authorisation of track construction and use requires:

- Written agreement between the recreation club or organisation and Forests NSW
- Minimisation of the impact of tracks on the natural environment.
- Minimisation of the impacts or track use (e.g events) on other forest users and neighbours
- Track construction and maintenance to agreed standards

2 Scope

This document outlines the process for the planning, building and use of approved, purpose built, mountain bike tracks for recreation on State Forest tenure. It does not deal with the use of State forest roads and fire tracks for recreation or the construction of tracks for other recreational uses (although it is recognized that many of the same principles will apply).

3 Legislative and Policy

The promotion and encouragement of recreation is one of the objects of the *Forestry Act 1916*. Recreational track construction and usage is not categorized as a forestry activity under the Integrated Forestry Operations Approval (IFOA) and does not directly incur the planning and management regimes of the IFOA. However the planning regime of the IFOA has been used as a best practice template to construct these guidelines.

Priority E8 of the State Plan commits Forests NSW to increasing recreational visitation in general on State forests and other public lands by 20%, and specifically to increasing sporting activities by 10% by 2016. The development of targeted facilities is an identified means of achieving this goal.

Forests NSW Recreational Policy (“Living, Working Playing... Forests 2005-2009”) provides the rationale and scope for the range of recreational activities on State forests. Key themes of the policy are appropriate and responsible use that are consistent with the principles of sustainable forest management.

Forests NSW Environmental Policy commits to the conservation of biodiversity, protection of soil, water, cultural heritage; and the provision of social and economic development. In particular, under the policy Forests NSW will meet or exceed regulatory requirements and government policy, implement world’s best practice in forest management and develop and implement efficient energy use, waste management and pollution control measures in all activities.

4 Administrative Arrangements

Prerequisites for the establishment of purpose built recreational tracks on State forest are that the group building and maintaining the tracks are an organized club or organisation, preferably incorporated, with \$10 million public liability insurance coverage.

A written agreement signed by the club and Forests NSW will be the basis for planning, building and maintenance of the tracks and any associated infrastructure. See Appendix 1 for an agreement template. This agreement will be complemented by an Occupation Permit which is the standard administrative instrument for infrastructure development on State forest and requires a yearly rental to be paid for the use of the area.

Any events to be held using the tracks, whether internal club events or larger events will require a Special Purpose Permit. This permit is separate from the track agreement and occupation permit described above.

5 Impact of Tracks

Well constructed and maintained tracks will minimise impact on the natural environment through appropriate placement within the landscape, good track construction techniques and periodic maintenance. Conversely, poorly constructed tracks will increase the impact on the environment by increased initial damage to natural features at the time of construction because of inappropriate placement in the landscape and ongoing damage due to the breakdown of poorly constructed tracks.

However, even the best tracks will have an imprint on the landscape and there is therefore a need to assess the impact to avoid damage to the sensitive components of the local environment.

6 Track Planning

The process for establishing tracks that will have the minimal impact on the environment is:

- 1) Contact your local Forests NSW office and identify a suitable area for track construction.
- 2) Plan the track routes on the ground.
- 3) Assess the routes for environmental impact.
- 4) Modify track location and design to avoid or mitigate environmental impact.
- 5) Construct the tracks according to IMBA techniques and standards

All these steps are essential in getting tracks that are authorised, environmentally responsible and robust.

Exclusion and restriction zones provide the mechanism to minimize and mitigate the impact of tracks at a landscape level. Field surveys provide the means to identify features at a local scale and appropriate track location and construction is the mechanism to avoid or mitigate impact on these field identified features.

6.2 Identify suitable area

Contact the local Forests NSW office **before** any track planning. Forests NSW are amenable to the establishment of purpose built recreation tracks in on State Forest in suitable areas. Not all areas of State forest are suitable or available for recreational tracks for environmental, operational, existing use or forest management reasons. Contact with the local forestry office will save time and effort, and avoid problems in track location.

Failure to get prior approval can, as a minimum, result in possible track closure and rehabilitation in unsuitable areas, and as a maximum, prosecution of track builders for unlawful activities on State forest. Unauthorised tracks can also create an unsympathetic attitude towards recreational tracks which can influence proposals into the future.

6.2.1 Exclusion and Restriction Zones

Within a suitable area there will be features of the landscape that will be excluded because they require special protection, often with a buffer zone, and other areas that will have specific requirements or restrictions for track location or construction. An example of the former is a cultural heritage site and the most common example of the latter is a stream crossing. The local Forests NSW office will advise on the location of and conditions applying to these zones.

See Appendix 4 for South Coast exclusion zones and conditions.

6.3 Track Route Planning

Use the 'Track Solutions – IMBA's Guide to Building Sweet Singletrack' book by the International Mountain Bicycling Association as a guide to planning track location to suit both the landscape and the desired type of track. In the suitable area identified above, mark out the track route with flags or marker tape, avoiding any exclusion zones. Do not construct anything at this stage.

6.4 Environmental Assessment

Track construction and use will have an impact on the environment. In order to minimize this impact on the sensitive components of the environment an assessment by a qualified person is required.

The most suitable instrument for the assessment is an Environmental Impact Assessment or EIA. An EIA is a versatile instrument that is applicable to a wide variety of situations and it covers flora and fauna, pollution, social and economic impacts. On the surface it can appear daunting but its application to individual cases such as a recreational track will result in many of the EIA sections returning a nil entry.

See Appendix 2 for an EIA template.

6.4.1 EIA guidelines for recreational tracks

The main areas of the EIA requiring attention for recreational tracks on State Forest are:

- Soil erosion
- Endangered flora, fauna and ecological communities
- Cultural heritage

These will require field survey by qualified people. Field survey should include the area 10 metres either side of the planned track to allow for track redesign and maintenance.

6.4.2 Soil Erosion

Soil displacement and erosion is probably the main environmental impact from recreational tracks. Erosion areas will only become evident after track construction and use, however these can be minimized through well planned and constructed tracks.

At the planning stage erosion from recreation tracks can be mitigated by:

- avoiding locating tracks in restriction zones
- when in restriction zones conforming to the conditions
- correct track placement and construction techniques

Local conditions are to be considered in field survey and addressed in the EIA.

The key to mitigating erosion from tracks is a regular and robust maintenance schedule, including route modification to correct erosion areas as they appear.

6.4.3 Flora and Fauna

Endangered flora and fauna species and Endangered Ecological Communities (EEC) are those listed under the *Threatened Species Act 1995*. The following website will assist in identifying the listed species and communities present in local areas around NSW.

http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/browse_cma.aspx

Not all species will require assessment as appropriate track construction does not affect standing trees and thereby has little or no effect on arboreal animals. Species groups requiring assessment are:

- Shrubs
- Grasses, orchids and ground cover plants
- Frogs
- Snakes and lizards
- Ground dwelling mammals
- Birds that are wholly or partly ground dwelling

The first step is to check on known occurrences. Forests NSW can provide the location of known occurrences of endangered flora, fauna or EEC for areas of State forest.

The second step is to conduct field surveys by qualified people of the track routes and the area 10 metres either side to identify occurrences of endangered species or communities.

The presence of any endangered flora, fauna or EEC identified through field survey would require an Assessment of Significance (7 part test). This can be done separately for each species or as a combined assessment dealing with all identified or likely species.

See Appendix 2 for a list of the factors of assessment for a 7 Part Test.

6.4.4 Cultural heritage

Aboriginal and non Aboriginal cultural heritage requires assessment. The local Forests NSW office can provide advice as to the location of, or likelihood of, occurrence of cultural heritage sites. Based on this advice a field survey by qualified people may be required.

7 Modification of track location

The results of the EIA and subsequent assessments of significance may result in the need to alter track location or design to avoid, mitigate or minimize impacts on identified features.

Large area features such as critical habitat for fauna species, unmapped wetlands or vegetation communities will result in exclusion of those areas from track construction. The identification of individual endangered flora species, cultural heritage sites or from field survey will likely result in the need to modify track routes to avoid and protect these features.

Substantial changes to track location and design will require a review of the EIA so it is practical to assess and survey any area that may be used for track alternatives or for tracks in the future.

8 Track Construction

Track location, construction and maintenance are to conform to International Mountain Bicycling Association guidelines as specified in the book 'Trail Solutions – IMBA's Guide to Building Sweet Singletrack' (or subsequent versions).

8.2 Erosion mitigation and soil and water protection

Erosion on a track is usually a function of poor track design or construction. A lack of consideration of soil types and natural drainage patterns is the most common cause of track erosion.

Minimising erosion of the track surface is important in providing a stable surface that requires low maintenance, whilst at the same time reducing the amount of sediment generated from the track surface. Tracks should be located on ridges or side slopes wherever possible. Low lying areas and drainage features should only be traversed to gain access to other areas of the forest.

To avoid excessive runoff from track surfaces, tracks should be constructed with outfall drainage where feasible. Where outfall drainage is not possible, drainage structures such as rollovers or rubber flaps should be used to avoid erosion of the track surface.

The following main principles are to apply to track construction:

- a. The track grade should not exceed half the grade of the hill slope that the track traverses. If the grade does exceed half the hill slope it is classified as a fall line trail. Water will flow down a fall-line trail rather than across it. This half rule is especially important in gently sloping areas.
- b. The average track grade over the length of the trail or should be less than 10% ($\sim 6^\circ$). This minimizes erosion in most soil types, provides flexibility in track design and rerouting in most areas, and accommodates local variations in hill slope of track grade. Certain track sections may need grade restriction below 10% to deal with local features.
- c. Regular grade breaks are essential to ensure runoff does not exceed the erosion threshold of the track surface. A common track design error is a lack of grade changes. A track that contains a long uninterrupted run will not only encourage excessive bike speed but will increase the velocity and volume of water runoff resulting in erosion of the track surface.
- d. Control speed by planning and building chokes, corrals, turns and obstacles in appropriate locations to create gradual transitions in rider speed. Controlling speed through correct placement of these features is the key to minimizing track wear from sharp breaking and turning.
- e. Tracks are to be constructed with outslope wherever possible to drain water quickly off the track.
- f. Tracks should be located on the uphill side of established trees to utilize the bench and avoid their roots. Use natural obstacles to provide barriers to “surf” around. Grade reversals will improve drainage.
- g. Soil and other debris should not be built up around trees as over time this can cause a decline in tree health.
- h. The worst erosion problems are usually found on corners. On corners where the grade exceeds $4^\circ - 7^\circ$ it is likely that erosion will occur. Erosion on these corners should be minimised, by draining the track above the turn to divert water off the track.
- i. A track must not be constructed in a drainage feature other than to cross the feature. Where a track traverses a drainage feature, care must be taken to ensure that the track itself does not capture the cross flow. This is achieved by ensuring that the entry and exit points of the tracks are higher than the bed of the depression.
- j. Tracks must not be used while there is run-off from the track surface.
- k. Where track drainage structures are used they must be located, constructed and maintained to divert water onto stable surfaces capable of handling concentrated water flow and which provide for efficient sediment trapping.

- l. As a result of deformation through track usage, berms may form on the outside of the track. By restricting the movement of water off the track, berms cause an increase in the volume and velocity of flow thereby raising the potential for erosion of the track surface. An effective method to rehabilitate the track is to use hand tools (such as McLeod, adz hoe, pick, etc.), to remove the berm and reinstate outfall drainage. Care must be taken not to disturb the already compacted centre of the track.
- m. The construction of jumps, 'board walks' and 'bridges' and similar infrastructure is permitted, where these are built according to the plan map location and to minimise or eliminate impact on soil and water (i.e. over drainage features).
- n. The construction of elevated and/or highly technical features known as 'north shore' may be permitted but will require specific approval.

For further principles, details and techniques please refer to IMBA's 'Trail Solutions' book.

APPENDIX 1

AGREEMENT between FORESTS NSW - Macquarie Region and Central Tablelands MOUNTAIN BIKE CLUB INC.

1 Introduction

Forests NSW (FNSW) is a Public Trading Enterprise within the NSW Department of Primary Industries and responsible for managing almost 2.5 million hectares of native and plantation forest on behalf of the people of New South Wales. Under the *Forestry Act 1916* the organisation's primary objective is to provide a sustained supply of timber to the community in conjunction with a range of other values.

Almost all State forests are available for recreational activities. Providing access to forests for a wide-range of activities through the maintenance of facilities as well as suitable forest environment is an important contribution by FNSW to the community. FNSW has in place a Corporate Recreation & Tourism Policy 2010 - 2014 which sets the administrative environment for the provision and pursuit of recreation in State forests.

FNSW recognises that mountain biking is a valid recreational use of State forest and the Central Tablelands Mountain Bike Club recognises that State forests are a good venue for these activities.

Central Tablelands Mountain Bike Club recognises that the area of Lidsdale State Forest over which this agreement applies will be scheduled for forestry operations such as timber harvesting, hazard reduction burning and road maintenance from time to time.

Both parties recognise that there is a need for local communities and groups to work in partnership to ensure that tracks and tracks are constructed in appropriate locations and to agreed standards.

Central Tablelands are a mountain bike club that is affiliated with Mountain Bike Australia Inc (MTBA) and are covered by that organisation's Public Liability, Sports Injury and Indemnity Insurances.

2 Purpose of this Agreement

This Agreement documents the basis for a relationship between FNSW and Central Tablelands Mountain Bike Club, to facilitate access for the latter to part of Lithgow State Forest for mountain biking, and the management of tracks and facilities established for the purpose of mountain biking. It includes the following elements:

- ★ An outline of the administrative framework under which the activities authorised by this agreement will be covered.
- ★ Reference to legal and statutory requirements that must be met by all parties to this agreement.
- ★ Operational guidelines for the establishment and maintenance of tracks for mountain bike riding in Lidsdale State forest.
- ★ Principles for the cooperative management of activities associated with a mountain bike facility within Lidsdale State forest.

3 Agreement

NSW and the Central Tablelands Mountain Bike Club agree to maintain a constructive relationship in regard to the latter constructing and maintaining mountain bike tracks and related facilities on Lidsdale State Forest.

It is agreed that the Central Tablelands Mountain Bike Club shall conduct specified works and activities within the area shown on the attached map in accordance with the Specifications and Guidelines set out in Attachment 1. However, the Central Tablelands Mountain Bike Club agrees to obtain specific approval from FNSW prior to any construction of new mountain bike tracks or associated facilities. Upgrading or realignment of existing track sections not exceeding 50m in length can be implemented without specific approval from FNSW, but must comply with the attached operational guidelines for track construction.

The use of contractors to undertake work on behalf of the Central Tablelands Mountain Bike Club must first be approved by FNSW. While operating on State forest, contractors must be supervised by an appropriately experienced and qualified person representing either FNSW or the Central Tablelands Mountain Bike Club.

FNSW may conduct forest operations at any time that may affect tracks and agrees to consult with the Central Tablelands MBC prior to the commencement of any operations (including timber harvesting, roading and burning) that may impact on mountain bike tracks and facilities covered by this agreement.

The Central Tablelands Mountain Bike Club must apply for an Occupation Permit over the area of Lidsdale State Forest identified for the establishment of the tracks and facilities it proposes to construct and manage. The Occupation Permit will be renewable annually at the discretion of FNSW, for an agreed fee, the fee to be adjusted periodically to reflect movements in the Consumer Price Index.

4 Termination

If Central Tablelands Mountain Bike Club is in breach of the terms of this Agreement, the Occupation Permit or the Special Purposes Permit, FNSW will give Central Tablelands Mountain Bike Club 30 days notice to remedy the breach and if the breach is not remedied during that period FNSW may terminate this Agreement.

5 Site Management Principles

5.2 Regulatory/Legal

If Lidsdale State Forest is within the Macquarie Regional Forest Agreement Region and is subject to the Integrated Forestry Operational Approval (IFOA) for the Macquarie Region.

FNSW also has in place an Environmental Management System (EMS) through which the risk the environmental consequences of activities on State forest are managed.

FNSW will administer this agreement to ensure that all actions that it authorises are consistent with the EMS and the IFOA.

5.3 Track Planning

A detailed plan map of the planned tracks will be supplied to Forests NSW for approval prior to the location and construction of any tracks. The map will show planned track routes, location of features such as jumps, bridges, boardwalks and similar structures, stream crossings, trackhead and associated facilities. The plan map will also show features of management significance, particularly those identified by any flora, fauna or archaeological surveys.

5.4 Environmental Assessment

An Environmental Impact Assessment and associated Assessments of Significance (if required) of the planned track corridor and associated infrastructure will be carried out by qualified people and provided to Forests NSW.

5.5 Track Construction and Maintenance

In accordance with the above, sustainable track building practices must be adopted and applied. Track construction including technical features is to be to the IMBA (2005) track building standards which are recognised as current international standards for the sustainable construction and maintenance of mountain bike tracks.

Ongoing maintenance of the tracks will be the responsibility of Central Tablelands Mountain Bike Club. FNSW may request that maintenance be carried out if the condition of the tracks/tracks falls below the acceptable IMBA standards or does not comply with relevant operational or environmental guidelines applying to activities on State forests.

Maintenance inspections of the tracks may be undertaken by FNSW at any time, in consultation with the If Central Tablelands Mountain Bike Club.

See Attachment 1 for Track construction Specifications & Guidelines

5.6 Governing Law

This Agreement is governed by the laws of New South Wales.

6 Events

It is recognised that if Central Tablelands Mountain Bike Club may seek to host organised mountain bike events involving non-member riders at the location that this agreement covers. This agreement does not cover those events and a separate permit, know as a special purpose permit, must be obtained prior to any such event and any relevant fees must be remitted as per FNSW recreation policy.

7 Signage

All track signage must meet relevant track safety standards and Forests NSW track classification guidelines. Where safety standards have not been developed, the Central Tablelands Mountain Bike Club is responsible for ensuring that sign-posting adequately addresses all foreseeable safety issues and has prior approval by Forests NSW.

8 Publications

Any publications about or relating to the tracks or track usage, for example maps, brochures, magazine articles require Forests NSW agreement.

9 Responsibilities

9.1 Central Tablelands Mountain Bike Club is responsible for:

- a) Track construction and maintenance according to the guidelines in this agreement
- b) Flora, fauna or archaeological surveys that may be required
- c) Site safety, including traffic management where required.
- d) Prompt notification of Forests NSW of any problems on or near the tracks not covered by the guidelines and specifications of this agreement.
- e) Signage.

9.2 Indemnity

- a) If Central Tablelands Mountain Bike Club operates under the auspices of Mountain Bike Australia. All people working on tracks and tracks with Central Tablelands

Mountain Bike Club must be covered under Mountain Bike Australia (MTBA) indemnity insurance for working bees, volunteering and event purposes.

- b) Any contractors engaged to assist with construction or other works associated with the mountain bike track facility must have all relevant workers compensation and public liability insurances. Copies must be retained by the Central Tablelands Mountain Bike Club and be available for inspection by FNSW when requested.
- c) If Central Tablelands Mountain Bike Club shall keep FNSW indemnified against any legal liability, loss claim or proceedings for personal injury or death or property damage however arising from the carrying out of the construction as attached, to the extent that such injury or damage is attributable to any act of omission negligent or otherwise of the Club or its members/volunteers.

Documentary evidence of all relevant insurances and indemnities must be provided to FNSW before this agreement can take effect.

9.3 Forests NSW is responsible for:

- a) Advice regarding any required flora, fauna or archaeological heritage surveys or management that may be required.
- b) Assessment of compliance of this agreement
- c) Prompt notification of forest activities or operations that may affect track construction or use.

10 Compliance

- a) Track construction is to occur on agreed routes only. Major variation of routes requires prior approval of Forests NSW. Major variation is defined as deviation of greater than 10 metres from agreed marked routes.
- b) Maintenance of tracks is to meet standards of IMBA 'Track Solutions'.
- c) Failure by If Central Tablelands Mountain Bike Club to comply with the conditions of this agreement may result in the suspension or cancellation of this agreement.
- d) Areas of non compliance will be determined by consultation between both parties.

11 Endorsement

This agreement has been signed into effect by the undersigned on behalf of their respective organisations. It can be reviewed at any time at the request of either party.

.....

Regional Manager
Macquarie Region

.....

President
Central Tablelands Mountain Bike Club Inc

Dated theday of200

Attachment to Appendix 1

Operational specifications and guidelines for the establishment and maintenance of tracks for mountain bike riding in State forest.

Track location, construction and maintenance are to conform to International Mountain Bicycling Association guidelines as specified in the book 'Trail Solutions – IMBA's Guide to Building Sweet Singletrack'.

1. Erosion mitigation and soil and water protection

Erosion on a track is usually a function of poor track design or construction. A lack of consideration of soil types and natural drainage patterns is the most common cause of track erosion. Minimising erosion of the track surface is important in providing a stable surface that requires low maintenance, whilst at the same time reducing the amount of sediment generated from the track surface. Tracks should be located on ridges or side slopes wherever possible. Low lying areas and drainage features should only be traversed to gain access to other areas of the forest.

To avoid excessive runoff from track surfaces, tracks should be constructed with outfall drainage where feasible. Where outfall drainage is not possible, drainage structures such as rollovers or rubber flaps should be used to avoid erosion of the track surface.

The following main principles are to apply to track construction:

- a. The track grade should not exceed half the grade of the hill slope that the track traverses. If the grade does exceed half the hill slope it is classified as a fall line trail. Water will flow down a fall-line trail rather than across it. This half rule is especially important in gently sloping areas.
- b. The average trail grade over the length of the trail or should be less than 10% ($\sim 6^\circ$). This minimizes erosion in most soil types, provides flexibility in trail design and rerouting in most areas, and accommodates local variations in hill slope of track grade. Certain trail sections may need grade restriction below 10% to deal with local features.
- c. Regular grade breaks are essential to ensure runoff does not exceed the erosion threshold of the track surface. A common track design error is a lack of grade changes. A track that contains a long uninterrupted run will not only encourage excessive bike speed but will increase the velocity and volume of runoff resulting in erosion of the track surface.
- d. Control speed by planning and building chokes, corrals, turns and obstacles in appropriate locations to create gradual transitions in rider speed. Controlling speed through correct placement of these features is the key to minimizing trail wear from sharp breaking and turning.
- e. Tracks are to be constructed with outslope wherever possible to drain water quickly off the track.
- f. Tracks should be located on the uphill side of established trees to utilize the bench and avoid their roots. Use natural obstacles to provide barriers to "surf" around. Grade reversals will improve drainage.
- g. Soil and other debris should not be built up around trees as over time this can cause a decline in tree health.
- h. The worst erosion problems are usually found on corners. On corners where

the grade exceeds 4° - 7° it is likely that erosion will occur. Erosion on these corners should be minimised, by draining the track above the turn to divert water off the track.

- i. A track must not be constructed in a drainage feature other than to cross the feature. Where a track traverses a drainage feature, care must be taken to ensure that the track itself does not capture the cross flow. This is achieved by ensuring that the entry and exit points of the tracks are higher than the bed of the depression.
- j. Tracks must not be used while there is run-off from the track surface.
- k. Where track drainage structures are used they must be located, constructed and maintained to divert water onto stable surfaces capable of handling concentrated water flow and which provide for efficient sediment trapping.
- l. As a result of deformation through track usage, berms may form on the outside of the track. By restricting the movement of water off the track, berms cause an increase in the volume and velocity of flow thereby raising the potential for erosion of the track surface. An effective method to rehabilitate the track is to use hand tools (such as McLeod, adz hoe, pick, etc.), to remove the berm and reinstate outfall drainage. Care must be taken not to disturb the already compacted centre of the track.
- m. The construction of jumps, 'board walks' and 'bridges' and similar infrastructure is permitted, where these are built according to the plan map location and to minimise or eliminate impact on soil and water (i.e. over drainage features).
- n. The construction of elevated and/or highly technical features known as 'north shore' may be permitted but will require specific approval.

For further principles and techniques please refer to IMBA's 'Trail Solutions' book.

5. Safety

- a.) Signage is to be placed and maintained in locations as shown on the plan map or as agreed with Forests NSW. Signage is to comply with Forests NSW track classification guidelines.
- b.) Machinery (diggers, excavators etc) must not be used without prior approval. When heavy machinery is engaged, anyone in proximity to the worksite must be wearing a safety helmet and high visibility vest.
- c.) A site safety plan, incorporating a medical emergency evacuation plan, must be completed by ??? Mountain Bike Club and approved by FNSW prior to any work commencing.
- d.) A First Aid kit, meeting the 'Type B' standard kit must be located at each site.
- e.) Mechanised tools (i.e. chainsaw) may only be used by Club members/volunteers with the appropriate qualifications. All procedures relating to the safe use of equipment, including personal protective equipment, must be adhered to in the event of an accredited operator using mechanised tools on State forest.

APPENDIX 2

EIA and 7 Part Test

**Environmental Impact Assessment
Mountain Bike Single Track**

Property: Lidsdale **State Forest**

Approved Activities under this EIA

Approved Activity	Date	Remarks/Initials
Burning		
Road Construction		
Other: Construction of Mountain Bike Single Track		

Other Applications/Determinations Required

NVCA	
DA	
PRA	
IFOA	
None	

Office Use only	

Mountain Bike Single Track EIA
Evaluation of Likely Significance of Potential Impacts on the Environment
 See attached for detailed assessment

Impacts	Potential significance considering the extent of impacts	Potential significance considering the nature of the impacts
Physical and pollution		
a) air impacts		
b) water impacts		
c) soil impacts		
d) noise and vibration impacts		
Biological		
a) fauna		
b) flora		
c) ecological		
Natural Resources		
a) community resources		
b) natural resources		
Community		
a) social impacts		
b) economic impacts		
c) heritage, aesthetic, cultural impacts		
d) transportation impacts		
Activity as a Whole		

The above information is based on the Central Tablelands Mountain Bike Single Track Operational Plan

Prepared by

Dated

and
 The Assessment of Significance

Prepared by

Signature.....

Dated

**Central Tablelands Mountain Bike Single Track
Table 1 Physical Factors**

Sensitive areas	Type of potential adverse or beneficial impacts	Evaluation criteria								Ranking of potential significance
		Size, scope, intensity & duration	What is the confidence in predicting impacts?	How resilient is the environment to cope with impacts?	Can the impacts be reversed?	How well can the impacts be mitigated?	Do the operations comply with standards, plans, policies?	What is the level of public concern?	Are further studies required on impacts or mitigation?	
1. flood prone areas										
2. natural waterbodies, riparian zones, wetlands										
3. areas with high water table										
4. erosion prone areas										
5. areas with slopes greater than 25°										
6. areas with high risks from land slides or subsidence										
7. cut and fill roading areas										
8. cultivated areas (rip mounded etc)										
9. areas with acid sulphate soils , sodic soils or salinity problems or potential.										

Sensitive areas	Type of potential adverse or beneficial impacts	Evaluation criteria								Ranking of potential significance
		Size, scope, intensity & duration	What is the confidence in predicting impacts?	How resilient is the environment to cope with impacts?	Can the impacts be reversed?	How well can the impacts be mitigated?	Do the operations comply with standards, plans, policies?	What is the level of public concern?	Are further studies required on impacts or mitigation?	
10. areas with degraded or contaminated soil or water (ground or surface)										
11. areas with degraded air quality										
12. bushfire prone areas										
13. areas with increased noise, traffic congestion or odour to unacceptable levels for the surrounding community										
14. areas or items of high aesthetic or scenic value										
15. Other features										

**Central Tablelands Mountain Bike Single Track
Table 2 Biological Factors**

Sensitive areas	Type of potential adverse or beneficial impacts	Evaluation criteria								Ranking of potential significance
		Size, scope, intensity & duration	What is the confidence in predicting impacts?	How resilient is the environment to cope with impacts?	Can the impacts be reversed?	How well can the impacts be mitigated?	Do the operations comply with standards, plans, policies?	What is the level of public concern?	Are further studies required on impacts or mitigation?	
1. habitat/wildlife corridors										
2. fishing grounds and fish breeding or nursery grounds										
3. threat to endangered fauna species*										
4. any reduction of critical habitat of endangered fauna										
5. threat to endangered flora species* or Endangered Ecological Community*										
6. any threat to the biological diversity or ecological integrity of species or communities										

* As listed under Schedule 12 of the Threatened Species Act 1995. A Species Impact Statement will be required if the activity is likely to significantly affect threatened species or communities.

**Central Tablelands Mountain Bike Single Track EIA
Table 3 Natural Resource Factors**

Sensitive areas	Type of potential impacts (beneficial or adverse)	Evaluation criteria								Ranking of potential significance
		Size, scope, intensity, duration	What is the confidence in predicting impacts?	How resilient is the environment to cope with impacts?	Can the impacts be reversed?	How well can the impacts be mitigated?	Do the operations comply with standards, plans, policies?	What is the level of public concern ?	Are further studies required on impacts or mitigation?	
1. land reserved or dedicated under the Forestry Act 1916 for preservation or other environmental protection purposes.										
2. lands protected under SEPP 14 - Coastal Wetlands - or SEPP 26 - Littoral Rainforests										
3. wetlands dedicated under the RAMSAR Wetlands Convention										
4. aquatic reserves dedicated under the Fisheries Management Act 1994										
5. land identified as wilderness under the Wilderness Act 1987 or declared as wilderness under the NPW Act										

Central Tablelands Mountain Bike Single Track EIA
Table 4 Community Factors

Sensitive areas	Type of Potential impacts (adverse or beneficial)	Evaluation criteria								Ranking of potential significance
		size, scope, intensity, duration	What is the confidence in predicting impacts?	How resilient is the environment to cope with impacts?	Can the impacts be reversed?	How well can the impacts be mitigated?	Do the operations comply with standards, plans, policies?	What is the level of public concern?	Are further studies required on impacts or mitigation?	
1. Aboriginal communities or areas subject to land rights claims										
2. areas or items of high archaeological, cultural, heritage or historical value										
3. areas of economic importance										
4. areas of scientific value										
5. areas of recreational value										
6. any other impacts associated with areas that are sensitive because of community factors										

Assessment of significance (7 part test)

The Factors of Assessment

(a) In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction

(d) In relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

APPENDIX 3

Endangered Flora, Fauna and EEC Lidsdale Area

For the Lidsdale the species requiring consideration are:

Fauna

Frogs:

Snakes and Lizards:

Mammals:

Birds:

Flora

Endangered Ecological Communities

For the **Lidsdale** the flora EECs requiring consideration are:

Appendix 4 Exclusion and Restriction Zones – Macquarie Region

1. Exclusion Zones

These areas have been excluded for protection of the environmental value. No new track construction allowed. Any existing track is to be closed and rehabilitated. Travel is allowed on existing roads only.

The zones are:

- Forest Management Zone 1 – Flora Reserves
- High Conservation Value Old Growth forest
- Cultural heritage sites
- Rainforest
- Wetlands
- Heath

The extent of the first two is as mapped. The remaining four have their known occurrences mapped but unmapped occurrences require field identification.

2. Restriction Zones

These zones can handle track construction under certain circumstances. IMBA track building guidelines to be strictly applied. See zones below for specific conditions.

The zones are:

- Stream buffers - track construction is allowed through these zones to allow track connectivity, but is to be minimised to the shortest, least damaging route. Stream crossings are allowed in places where the stream bed is not damaged and sediment from the track does not enter the stream.
- Rocky outcrops – track construction allowed if fauna assessment shows no evidence of Eastern Quoll presence.
- Slopes over 25 degrees – track construction generally not allowed but is possible after site assessment by qualified soil specialist.