

Trail Difficulty Rating Systems

Australian Mountain Bike
SECTION
10
Trail Guidelines





Trail Difficulty Rating Systems

General Difficulty Rating Requirements

As highlighted in the Sustainability Chapter, mountain bike riders seek a range of experiences, difficulty levels and challenges to satisfy their own specific riding expectations.

To cater for this variety of expectations, trail features and trail difficulty can be increased or decreased to meet the desired rider experience. As a result, not all trails will be suited to the experience and skills of all riders

A trail difficulty rating system allows trails to be graded according to their relative technical difficulty.

Trail are classified based on the physical attributes presented and the technical challenge of the trail, not the exertion and fitness that may be required by the user.

The classification of a trail must reflect the most difficult section of that trail for visitor risk management purposes.

It is important to provide information to:

- Help riders make informed decisions
- Encourage riders to use trails that match their skill level
- Manage risk and minimise injuries
- Aid in the planning and design of trails.

Trail classifications allow trail designers, builders and land managers to develop trails appropriate for the anticipated users, based on objective criteria.

Strategies that can be used to minimise and transfer risk regarding mountain bike trails include:

- Communicating the risk through classifications and signage; this reduces the probability of a rider attempting a trail above their ability.
- Installing a trail filter at the beginning of a trail to let the rider know what type of features to expect and give the option to turn back if they decide the trail will be too difficult for them.
- Construct a skills park near the trail head that incorporates features similar to those encountered in the trail network but located in a controlled environment (high reward and low risk for the rider).
- Providing similar features within a trail network from green to black to give riders the opportunity to practice to aid with skill progression.

The International Trail Marking System is used universally on ski fields, and has been adapted by the International Mountain Bicycling Association (IMBA) for classifying the difficulty of mountain bike trails.

These guidelines have adopted the IMBA system with the following additions and interpretations:

- The addition of two new trail difficulty classifications – one new classification between green and blue and one new classification between blue and black
- Making the following difficulty assessment criteria ‘guiding criteria only’:
 - » Trail width
 - » Trail surface
 - » Trail gradient
 - » Quality of signs
- Making the following difficulty assessment criteria ‘mandatory criteria’:
 - » Trail exposure
 - » Natural and technical trail features.

Symbols and Descriptions

The Trail Difficulty Rating System (TDRS) outlined below provides seven levels of difficulty for mountain bike trails. The TDRS enables visitors to understand the nature of the trail before beginning their ride and allows them to plan their ride for enjoyment, appropriate level of challenge and safety.

Trail ratings can be communicated in several ways. Pre-visit information may include a more detailed description of the ratings, while a shorter description is required for trailhead signage and maps. Rating colours should be used on all on trail directional signage.


Mountain bike TDRS short trail descriptors should be used at trail signage, on brochures and maps or similar applications.

Table 10: Mountain bike TDRS short descriptors


<i>Difficulty Symbol</i>	<i>Short Description</i>
	<p>Very easy</p> <p>Wide trail with a gentle gradient smooth surface and no obstacles Suitable for beginner cyclists with basic bike skills, and most bikes</p>
	<p>Easy</p> <p>Wide trail with a gentle gradient smooth surface Some obstacles such as roots, logs and rocks Suitable for beginner cyclists with basic mountain bike skills, and off-road bikes</p>
	<p>Easy with Intermediate Sections</p> <p>Likely to be single track with a moderate gradient, variable surface and some obstacles Some obstacles such as roots, logs and rocks Suitable for mountain bikers with mountain bikes</p>
	<p>Intermediate</p> <p>Single trail with moderate gradients, variable surface and obstacles May include steep sections Suitable for skilled mountain bikers with mountain bikes</p>
	<p>Intermediate with Difficult Sections</p> <p>Suitable for competent mountain bikers, used to physically demanding routes Expect large and unavoidable obstacles and features Challenging and variable with some steep climbs or descents and loose surfaces</p>
	<p>Difficult</p> <p>Suitable for experienced mountain bikers, used to physically demanding routes Navigation and personal survival skills are highly desirable Expect large, dangerous and unavoidable obstacles and features Challenging and variable with long steep climbs or descents and loose surfaces Some sections will be easier to walk</p>
	<p>Extreme</p> <p>Suitable for highly experienced mountain bikers, used to physically demanding routes Navigation and personal survival skills are highly desirable Severe constructed trails and/ or natural features, all sections are challenging Includes extreme levels of exposure and / or risk Expect large and unavoidable obstacles and features Some sections will be easier to walk</p>

Trail Classification Matrix

Very easy mountain bike trail / Fire trail

		Technical Description (for land Manager use)
Grade of trail		Very easy
Description		Likely to be a fire road or wide single track with a gentle gradient, smooth surface and free of obstacles
Guiding Criteria	Trail Width	2100 mm plus or minus 900 mm
	Trail Surface	Hardened or smooth
	Trail Gradient	Climbs and descents are mostly shallow Ave. trail grade – less than 5% Max. trail grade – 10%
	Quality of Markings	Trailhead signs and route markers at intersections
Mandatory Criteria	Level of Trail Exposure	Firm and level fall zone on either side of the trail corridor
	Natural Obstacles and Technical Trail Features (TTFs)	No obstacles
Experience Required		Suitable for beginner / novice cyclists with basic bike riding skills Suitable for most bikes

Easy mountain bike trail


		Technical Description (for land Manager use)
Grade of trail		Easy
Description		Likely to be a combination of fire road or wide single track with a gentle gradient, smooth surface and relatively free of obstacles Short sections may exceed these criteria
Guiding Criteria	Trail Width	900 mm plus or minus 300 mm
	Trail Surface	Mostly firm and stable
	Trail Gradient	Climbs and descents are mostly shallow, but trail may include some moderately steep sections Ave. trail grade – 7% or less Max. trail grade – 15%
	Quality of Markings	Trailhead signs and route markers at intersections
Mandatory Criteria	Level of Trail Exposure	Exposure to either side of the trail corridor includes downward slopes of up to 10%
	Natural Obstacles and Technical Trail Features (TTFs)	Unavoidable obstacles to 50mm high, such as logs, roots and rocks Avoidable, rollable obstacles may be present Unavoidable bridges 900mm wide Short sections may exceed these criteria
Experience Required		Suitable for beginner / novice mountain bikers with basic mountain bike skills Suitable for off-road bikes

The Trail Classification Matrix incorporates the Trail Difficulty Rating System and provides detailed information to use when planning, designing, constructing and maintaining mountain bike trails to ensure a consistent classification standard is applied.


	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Likely to be a fire road or wide single track with a gentle gradient, smooth surface and free of obstacles	Wide trail with a gentle gradient smooth surface and no obstacles Suitable for beginner cyclists with basic bike skills, and most bikes	Wide trail, gentle gradient smooth surface, no obstacles For beginner cyclists with basic bike skills
	Two riders can ride side by side		
	Hardened with no challenging features on the trail		
	Climbs and descents are mostly shallow		
	Clearly signposted		
	Firm and level fall zone on either side of the trail corridor		
	No obstacles		
	Suitable for beginner / novice cyclists with basic bike riding skills Suitable for most bikes		

	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Likely to be a combination of fire road or wide single track with a gentle gradient, smooth surface and relatively free of obstacles Short sections may exceed these criteria	Wide trail with a gentle gradient smooth surface Some obstacles such as roots, logs and rocks Suitable for beginner cyclists with basic mountain bike skills, and off-road bikes	Wide trail, gentle gradient, some obstacles For beginner mountain bikers with basic mountain bike skills
	Handlebar width or greater		
	Mostly firm and stable		
	Climbs and descents are mostly shallow, but trail may include some moderately steep sections		
	Clearly signposted		
	N/A		
	Trail may have obstacles such as logs, roots and rocks		
	Suitable mountain bikers with basic mountain bike skills Suitable for most bikes		

Easy / Intermediate mountain bike trail

		Technical Description (for land Manager use)
	Grade of trail	Easy with Intermediate Sections
	Description	Likely to be single track with a moderate gradient, variable surface and some obstacles Short sections may exceed these criteria
Guiding Criteria	Trail Width	750 mm plus or minus 200 mm
	Trail Surface	Mostly firm and stable
	Trail Gradient	Climbs and descents are mostly shallow, but trail may include some moderately steep sections Ave. trail grade – 7% or less Max. trail grade – 20%
	Quality of Markings	Trailhead signs and route markers at intersections
Mandatory Criteria	Level of Trail Exposure	Exposure to either side of the trail corridor includes downward slopes of up to 20%
	Natural Obstacles and Technical Trail Features (TTFs)	Unavoidable obstacles to 100mm high, such as logs, roots and rocks Avoidable, rollable obstacles may be present Unavoidable bridges 900mm wide Short sections may exceed these criteria
	Experience Required	Suitable for beginner / novice mountain bikers with basic mountain bike skills Suitable for off-road bikes


Intermediate mountain bike trail

		Technical Description (for land Manager use)
	Grade of trail	Intermediate
	Description	Single trail with moderate gradients, variable surface and obstacles Dual use or preferred use
Guiding Criteria	Trail Width	600 mm plus or minus 300 mm
	Trail Surface	Possible sections of rocky or loose tread
	Trail Gradient	Mostly moderate gradients but may include steep sections Ave. trail grade – 10% or less Max. trail grade – 20%
	Quality of Markings	Trailhead signs and route markers at intersections
Mandatory Criteria	Level of Trail Exposure	Exposure to either side of the trail corridor includes downward slopes of up to 20%
	Natural Obstacles and Technical Trail Features (TTFs)	Unavoidable obstacles to 200 mm high, such as logs, roots and rocks Avoidable, obstacles to 600 mm may be present Unavoidable bridges 600mm wide Short sections may exceed these criteria
	Experience Required	Suitable for skilled mountain bikers with basic mountain bike skills Suitable for mountain bikes


	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Likely to be single track with a moderate gradient, variable surface and some obstacles Short sections may exceed these criteria	Likely to be single track with a moderate gradient, variable surface and some obstacles Some obstacles such as roots, logs and rocks Suitable for mountain bikers with mountain bikes	Single track, moderate gradient and some obstacles For beginner mountain bikers with basic mountain bike skills
	Handlebar width		
	Mostly firm and stable		
	Climbs and descents are mostly shallow, but trail may include some moderately steep sections		
	Clearly signposted		
	N/A		
	Trail may have obstacles such as logs, roots and rocks		
	Suitable mountain bikers with basic mountain bike skills Suitable for most bikes		

	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Intermediate	Intermediate	Intermediate
	Single trail with moderate gradients, variable surface and obstacles	Single trail with moderate gradients, variable surface and obstacles May include steep sections Suitable for skilled mountain bikers with mountain bikes	Single trail, moderate gradients, obstacles and some steep sections For skilled mountain bikers
	Handlebar width or greater		
	Possible sections of rocky or loose tread		
	Mostly moderate gradients but may include steep sections		
	Signposted		
	N/A		
	Trail will have obstacles such as logs, roots and rocks		
	Suitable for skilled mountain bikers with basic mountain bike skills Suitable for mountain bikes		

Intermediate / Difficult mountain bike trail

		Technical Description (for land Manager use)
Grade of trail		Intermediate with Difficult Sections
Description		Likely to be a challenging single trail with moderate gradients, variable surface and obstacles Dual use or preferred use
Guiding Criteria	Trail Width	600 mm plus or minus 300 mm
	Trail Surface	Possible sections of rocky or loose tread
	Trail Gradient	Mostly moderate gradients but may include steep sections Ave. trail grade – 15% or less Max. trail grade – 20%
	Quality of Markings	Trailhead signs and route markers at intersections
Mandatory Criteria	Level of Trail Exposure	Exposure to either side of the trail corridor includes downward slopes of up to 25%
	Natural Obstacles and Technical Trail Features (TTFs)	Unavoidable obstacles to 300 mm high, such as logs, roots and rocks Avoidable, obstacles to 1000 mm may be present Unavoidable bridges 600mm wide Short sections may exceed these criteria
Experience Required		Suitable for competent mountain bikers with good mountain bike skills Suitable for mountain bikes


Difficult mountain bike trail

		Technical Description (for land Manager use)
Grade of trail		Difficult
Description		Likely to be a challenging single trail with steep gradients, variable surface and many obstacles Single use and direction Optional lines Suitable for cross country, downhill or trials
Guiding Criteria	Trail Width	300 mm plus or minus 150 mm for tread and bridges
	Trail Surface	Variable and challenging
	Trail Gradient	Contains steep descents and climbs Max. trail grade – 25%
	Quality of Markings	Trailhead signs and route markers may be limited
Mandatory Criteria	Level of Trail Exposure	Exposure to either side of the trail corridor includes steep downward slopes or freefall
	Natural Obstacles and Technical Trail Features (TTFs)	Unavoidable obstacles 380 mm high, such as logs, roots, drop off's or constructed obstacles Avoidable, obstacles to 1200 mm may be present Unavoidable bridges 600mm wide Short sections may exceed these criteria
Experience Required		Suitable for experienced mountain bikers with good skills, used to physically demanding routes Navigation and personal survival skills are highly desirable Suitable for better quality mountain bikes

	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Likely to be a challenging single trail with moderate gradients, variable surface and obstacles	Suitable for competent mountain bikers, used to physically demanding routes Expect large and unavoidable obstacles and features Challenging and variable with some steep climbs or descents and loose surfaces	For competent mountain bikers Large, unavoidable obstacles and features Some steep climbs or descents and loose surfaces
	Handlebar width or greater		
	Possible sections of rocky or loose tread		
	Mostly moderate gradients but may include steep sections		
	Signposted		
	Exposure to either side of the trail corridor includes downward slopes of up to 25%		
	Trail will have obstacles such as logs, roots and rocks		
	Suitable for competent mountain bikers with good mountain bike skills Suitable for mountain bikes		

	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Likely to be a challenging single trail with steep gradients, variable surface and many obstacles	Suitable for experienced mountain bikers, used to physically demanding routes Navigation and personal survival skills are highly desirable Expect large, dangerous and unavoidable obstacles and features Challenging and variable with long steep climbs or descents and loose surfaces Some sections will be easier to walk	For experienced mountain bikers Challenging trail Large, unavoidable obstacles and features Long, steep climbs or descents and loose surfaces
	Can be less than handlebar width		
	Variable and challenging		
	Contains steep descents and climbs		
	Limited signs		
	Exposure to either side of the trail corridor includes steep downward slopes or freefall		
	Unavoidable obstacles such as logs, roots, drop off's or constructed obstacles		
	Suitable for experienced mountain bikers with good skills, used to physically demanding routes Navigation and personal survival skills are highly desirable Suitable for better quality mountain bikes		

Extreme mountain bike trail

		Technical Description (for land Manager use)
	Grade of trail	Extreme
	Description	Extremely difficult trails incorporating very steep gradients, highly variable surface and unavoidable, severe obstacles Single use and direction Optional lines Cross country, downhill or trials
Guiding Criteria	Trail Width	150 mm plus or minus 100 mm for tread and bridges Structures can vary
	Trail Surface	Widely variable and challenging
	Trail Gradient	Expect prolonged steep, loose and rocky descents or climbs Max. trail grade – 40%
	Quality of Markings	Trailhead signs and route markers may be limited
Mandatory Criteria	Level of Trail Exposure	Exposure to either side of the trail corridor includes steep downward slopes or freefall
	Natural Obstacles and Technical Trail Features (TTFs)	Large committing and unavoidable obstacles to 380 mm Avoidable, obstacles to 1200 mm may be present Unavoidable bridges 600mm or narrower Width of bridges is unpredictable Short sections may exceed these criteria
	Experience Required	Suitable for highly experienced mountain bikers with excellent skills, used to physically demanding routes Navigation and personal survival skills are highly desirable Suitable for quality mountain bikes

	Trail Description <i>(for public information)</i>	Generic Description <i>(for public Information)</i>	Short Classification Key
	Likely to be a challenging single trail with steep gradients, variable surface and many obstacles	Suitable for highly experienced mountain bikers, used to physically demanding routes	For highly experienced mountain bikers All sections extremely challenging Large, unavoidable obstacles and severe features
	Can be less than handlebar width	Navigation and personal survival skills are highly desirable	
	Widely variable and challenging	Severe constructed trails and/ or natural features, all sections are challenging	
	Expect prolonged steep, loose and rocky descents or climbs	Includes extreme levels of exposure and / or risk	
	Limited signs	Expect large and unavoidable obstacles and features	
	Exposure to either side of the trail corridor includes steep downward slopes or freefall	Some sections will be easier to walk.	
	Unavoidable obstacles such as logs, roots, drop off's or constructed obstacles		
	Suitable for highly experienced mountain bikers with excellent skills, used to physically demanding routes Navigation and personal survival skills are highly desirable Suitable for quality mountain bikes		

Adaptive Mountain Bike Classification Requirements

Break the Boundary Inc. with support of MTBA has developed the Australian Adaptive Mountain Bike Guidelines and resources for download and use by associate members, clubs, charities, departments and associations around Australia.

The Guidelines address many challenges with adaptive mountain biking and includes an Adaptive Trail Rating (ATR) system.

The Adaptive Trail Rating System is available from the Break the Boundary website.



▲ *The Australian Adaptive Mountain Biking Guidelines*



▲ *Adaptive Trail Rating signage example*

▼ *Adaptive mountain bike riders at a skills clinic, Toogoolawah, Qld. Photo by Denise Cox*



▼ Langford Park, Jarrahdale, WA. Photo by Kerry Halford





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