

ITRS

International Trail Rating System

Guide for Bikers

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Project developed by:



In collaboration with:



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ITRS approach to increase safety:

inform, not recommend

The ITRS Does:

The biker has to:

Before a tour

- Inform about the technical skill level that is required to be able ride most of the route
- Also inform about the share of the route that is above the given technical difficulty rating
- Inform about the level of exposure that will be encountered on the tour
- Inform about the fitness requirements
- Inform about the planning requirements (water supply on route, mobile reception, dangerous wildlife, rescue options)

- Decide if a route is suitable for them
- Chose a suitable bike and gear for the route
- Consider the influence of the current weather on the technical difficulty
- Consider the riding direction – technical trails are much harder to ride uphill than downhill
- Estimate how long the tour will take them at their current fitness level, or if they better take an E-Bike for the given endurance level
- Decide how much food and water to take, also considering if due to cold season or drought water sources may not be running
- Check if precautions for dangerous wildlife are required, e.g., taking bear spray
- ...

On a tour

- Via information in trail apps, or in printed maps, or with signage in the terrain show ...
- The technical difficulty of trail segments
 - The position of very exposed sections
 - If a trail is bike only or shared users

- Decide whether to ride or walk an exposed section
- Be prepared that the technical difficulty changes
- Consider the influence of the current weather conditions
- Be prepared to meet other trail users
- ...

ITRS Trail Rating

The ITRS is an objective way to assess trails and routes from a biker's perspective. The ITRS informs the bikers about the requirements to safely master the various challenges of a trail or an entire route. For this purpose, four aspects are evaluated in the ITRS, which in their interaction reflect the fascination and complexity of mountain biking: Technical Difficulty, Endurance, Exposure and Wilderness.

Technical Difficulty

Defined according to the riding skill level that you need to master the technical features of a trail

Endurance

The combined effect of length, uphill and downhill of a route

Wilderness

The amount of planning required to account for mobile phone reception, rescue options, water supply and dangerous wildlife

Exposure

Defined by the consequences of a fall off the trail



Technical Difficulty



Beginner



Intermediate



Advanced



Expert



Extreme

Endurance



Generally sportive



Occasional training sufficient



Regular training required



Frequent hard training necessary



Professional training required

Exposure



Normal injury risk



High risk of serious injury



Life threatening consequences



Fatal consequences

Wilderness



Civilized area



Some planning necessary



Careful preparation required



Professional planning is prerequisite

This page is called "Nutshell" and is available in multiple languages on www.itrs.bike

ITRS

International Trail Rating System



ITRS: Technical Difficulty

Short description



*Beginner
(green)*

Green is suitable for families with kids that are safely able to ride a bicycle. No MTB specific experience is required.



*Intermediate
(blue)*

If you have taken a beginners course or have already equivalent bike experience you should be able to try blue trails.



*Advanced
(red)*

You should have finished an advanced riding skills course or equivalent bike experience and you have automated all basic riding skills before trying out red trails.



*Expert
(black)*

One or more expert riding skills courses and/or a lot of experience are required to try riding a black trail. Typically, you love to play with the challenges of the terrain.



*Extreme
(orange)*

This level is for a few exceptional riders only and requires professional downhill, freeride, slope style and/or bike trial skills.



Disclaimer: this is a description of the levels but not the basis for the ratings. Please refer to the professional documentation for the description of the rating criteria.

Always be prepared to face an unexpected obstacle, especially if you are outside a managed bike park, trail center or equivalent. So adjust your speed. Trails are subject to environmental influences like erosion, growth of vegetation etc., and the actual difficulty of a trail may change over time.

In certain weather conditions the trails can be much harder to ride - the rating reflects the locally prevailing situation with respect to the trail being dry or wet.

ITRS

International Trail Rating System



ITRS: Technical Difficulty

Required riding skill level and
typical trail examples



*Beginner
(green)*

No special skills are required other than being able to safely ride a bicycle.



*Intermediate
(blue)*

Correct body position and actively adapting it to the trail is required, as well as braking techniques on unpaved surfaces.

Basic cornering skills, good line choice and visual focus (knowing where to focus when looking ahead) are helpful.

Basic jumping skills will increase the fun.



*Advanced
(red)*

Automated ability to constantly adapt your body position and confident brake control in steeper terrain and on varying trail surfaces is required.

Corners can become so narrow that accurate line choice and visual focus is needed.

Advanced and confident jumping and dropping skills are required.

Lifting the front and/or rear wheel will be helpful to overcome obstacles.



*Expert
(black)*

Fully automated, precise and instinctively fast adapting of body position and brake power are mandatory; excellent balance is a prerequisite.

Corners may be so tight that pivoting on the front wheel becomes necessary.

Jumps and drops can be much bigger and higher so expert skills and a very high level of confidence are required.

Obstacles may be so high that confident bunny hop and drop skills are helpful.



*Extreme
(orange)*

Professional downhill, freeride, slope style and/or bike trial skills are absolutely necessary.

Typical trail examples

Flat and smooth flow trail through a meadow.

Easy flow trail with low gradient (not steep), moderate berms and small rollable jumps.

Steeper hiking trail with tighter turns and big roots.
or
Bike park trail with medium jumps that are not rollable.

Bike Park with bigger gaps and drops up to 180 cm
or
Steep hiking trail with large steps, loose rocks and very tight switchbacks.

Some world cup DH tracks, Red Bull Hard-Line, Rampage.

ITRS

International Trail Rating System



ITRS approximate comparison 1/2

with major existing systems

ITRS

	Beginner	Intermediate	Advanced	Expert	Extreme	
STS Singletrail scale	S0	S1	S2	S3	S4	
Trailforks Europe	Green	Blue	Red	Black	Proline	
UK Forestry Commission <small>(until 2022)</small>	Easy	Moderate	Difficult / Experienced	Severe / Experts Bike Park		
IMBA North America (USA)	Easiest	Easy	More Difficult	Very Difficult	Extremely Difficult	
New Zealand gov.	Easiest	Easy	Intermediate	Advanced	Expert	Extreme
Tirol (Austria)	Very Easy (S0)	Easy (S1-2)	Moderately Difficult (S2-3)	Difficult (above S3)		
Finale Outdoor Region (Italy)	Easy		Medium	Hard	Very Hard	
DIMB (Germany)	Green	Blue	Red	Black		
VTOP0 France	V1	V2	V3	V4	V5	V6
BfU (Bike Park CH)	Easy <small>(beginners with bike park experience)</small>		Medium <small>(experienced park biker)</small>	Difficult <small>(very experienced park biker)</small>		
Denmark (OnTrail)	Very Easy	Easy	Medium	Difficult	Extreme / Park	

Disclaimer: comparison of the systems is approximate comparing values such as steepness, (average and maximum), trail width, underground, TTFs etc.

ITRS approximate comparison 2/2

with major existing systems

ITRS

	Beginner	Intermediate	Advanced	Expert	Extreme		
Norway (Stibbyg)	Easy	Moderate	Difficult	Very Difficult	Extreme		
Netherlands (NTFU)	Easy	Medium	Difficult	Very Difficult			
IMBA Espana (Spain)	Very Easy	Easy	Difficult	Very Difficult			
SchweizMobil (routes in CH)	Easy	Medium	Difficult				
Supertrail Maps	Yellow		Orange	Red	Purple		
Singletrail Maps	Blue		Red	Black	Purple		
Trailcenter Thisis	Green	Blue	Red	Black	Purple		
Auscycling (Australia)	Very Easy	Easy	Easy with intermediate sections	Intermediate	Intermediate with difficult sections	Difficult	Extreme

Disclaimer: comparison of the systems is approximate comparing values such as steepness, (average and maximum), trail width, underground, TTFs etc.

ITRS: Endurance / Fitness

Combined effect of length, uphill and downhill meters of a route

 <i>Generally sportive</i>	 <i>Occasional training sufficient</i>	 <i>Regular training required</i>	 <i>Frequent hard training necessary</i>	 <i>Professional training required</i>
<ul style="list-style-type: none">- Up to 25 km (typically around 10 km)- Or up to 350 meters climbing- Or up to 1'000 meters descending- Sporty entry-level.	<ul style="list-style-type: none">- Up to 50 km (typically around 25 km)- Or up to 800 meters climbing- Or up to 2'400 meters descending- Good general fitness necessary- You're going on day tours often.	<ul style="list-style-type: none">- Up to 100 km (typically around 50 km)- Or up to 1'500 meters climbing- Or up to 5000 meters descending- Good condition and regular training is required- A tough and long full-day tour or a whole day in the bike park does not scare you.	<ul style="list-style-type: none">- Often around 80 km- Or up to 3'400 meters climbing Or up to 10'000 meters descending- Frequent and structured endurance training is necessary- Exhausting and very long day tours, bike marathons, or records in downhill descend meters per day are your thing.	<ul style="list-style-type: none">- Typically > 100 km- Typically > 3'400 meters climbing- Or > 10'000 meters descending- Professional training for racing is required- You love racing, especially extreme bike marathons or any other form of extremely exhausting races.

Disclaimer: this is a description of the levels but not the basis for the ratings. Please refer to the professional documentation for the description of the rating criteria.

The effect of a climb on a technical trail versus a climb on a road on the endurance requirements is not captured here. It is taken into account for each route individually.

Comments on E-Bikes

The endurance rating is not for e-bikes but for the situation that you ride the route without a motor.

Please check the more detailed description of the route to make your own judgement if you take an e-bike. For a route with lots of climbing and/or long distances, it normally is easier with an e-bike. But there are exceptions to that (e.g. if the bike has to be pushed or, even more, carried uphill).

For routes that predominantly consist of downhill it is not easier with an e-bike, but can even be more exhausting if the weight of the e-bike is much higher than the weight of a normal bike.

ITRS: Exposure

Defined by the consequences of a fall off the trail



Normal injury risk
(green)

- Trail is not exposed in a way that a fall would have more severe consequences as it anyway has.



High risk of serious injury
(blue)

- A fall in such terrain carries a high risk of serious injury

- Examples: steep forest or meadow terrain below the trail, where one can stop a fall; or a 2 m high vertical drop directly next to the trail.

- There can be sections that are more exposed but secured by appropriate safety measures, so you may feel vertigo.



Life threatening consequences
(red)

- A fall in such terrain is life threatening

- Examples: steep terrain below the trail passing into a vertical drop further down, but you have a chance to stop yourself falling; or a 4 m high vertical drop directly next to the trail.



Fatal consequences
(black)

- A fall in such terrain is fatal

- Vertical drop right next to the trail without any possibility to stop your fall.



Disclaimer: this is a description of the levels but not the basis for the ratings. Please refer to the professional documentation for the description of the rating criteria.

The exposure rating does not depend on the width of the trail. Even a gravel road that runs alongside a vertical cliff drop without a safety feature is rated black. Reason: If you miss a turn and fall off the road the consequences will be fatal.

Persons with fear of heights may be able to walk black exposed sections on wide trails/roads, but not on singletrails. Please refer to the technical difficulty rating at exposed sections to understand the full situation at such points and decide if you take this route or not.

The most exposed section of a route determines the exposure rating of the whole route.

The locations of exposed sections have to be indicated in maps.

ITRS: Wilderness 1/2

Amount of planning required to account for rescue options, mobile phone reception, water supply and dangerous wildlife



Civilized area
(green)



Some planning
necessary
(blue)



Careful preparation
required
(red)



Professional planning
is prerequisite
(black)

Typical examples

Urban or suburban areas, bike parks and trail centers with permanent staff.

Most Middle European forests and small mountains, trail centers without permanent staff.

Remote areas of the alps, areas in the Rocky Mountains.

Australian Outback, regions in Himalayas, Canyonlands, Alaska, etc.



Mobile reception

Strong coverage everywhere.

More than 70% of tour distance with mobile reception.

30-70% of tour distance with mobile reception.

Less than 30% of tour distance with mobile reception.



Evacuation/rescue options

Less than 10 min from most remote point to next public road in normal walking speed.

Time to next public road in normal walking speed from most remote point of the route up to 1 h

Time to next public road in normal walking speed from most remote point of the route up to 6 h

Time to next public road in normal walking speed from most remote point of the route more than 6 h

Various quick evacuation options are possible including easy self-evacuation (examples: close to paved roads, medical staff on site, defibrillators installed).

Self-evacuation possible but takes longer, rescue without helicopter possible but rescue not available on site (example: access with 4-wheel drive only).

Professional help required for efficient rescue (fastest way is a helicopter), self-evacuation too slow and too complicated.

Only way to get help is via helicopter, self evacuation would take several hours if at all possible.

Disclaimer: this is a description of the levels but not the basis for the ratings. Please refer to the professional documentation for the description of the rating criteria.

The most critical of the four criteria determines the wilderness factor of a whole route, i.e., only one criterium needs to be met.

ITRS: Wilderness 2/2

Amount of planning required to account for rescue options, mobile phone reception, water supply and dangerous wildlife



*Civilized area
(green)*



*Some planning
necessary
(blue)*



*Careful preparation
required
(red)*



*Professional planning
is prerequisite
(black)*



Water supply

Longest distance
without drinking water:
up to 7 km

Sufficient, frequent
fountains, small bottle
sufficient.

Longest distance
without drinking water:
between 7 and 25 km

Limited, some fountains
along the route, planning
required of the amount
of water that you carry.

Longest distance
without drinking water:
between 25 and 50 km

Scarce, very few
fountains along the
route, careful planning
required of the amount
of water that you carry.

Longest distance
without drinking water:
more than 50 km

None, you need to be
self-sufficient with the
water that you take
along.



Wildlife



No dangerous wildlife.

Dangerous wildlife can
be met (e.g., venomous
but not deadly snakes or
spiders, lynx, wild boar)
or poisonous/spiky
plants like poison ivy or
cacti.

Life-threatening wildlife
can rarely be met (e.g.,
grizzlies or brown bears,
wolves, deadly venomous
snakes, spiders etc.).

Life-threatening wildlife
can frequently be met
(e.g., grizzlies or brown
bears, wolves, deadly
venomous snakes,
spiders etc.).

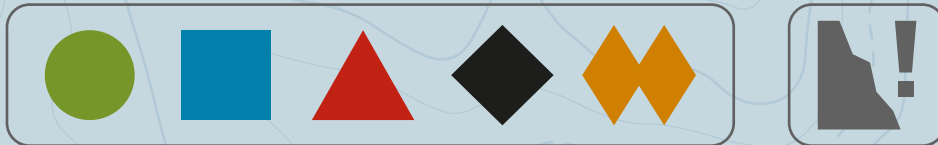
The most critical of the four criteria determines the wilderness factor of a whole route, i.e., only one criterium needs to be met.

Disclaimer: Please be aware that in the cold season water sources may be turned off; also periods of drought may result in some fountains not being running. You have to account for this yourself when planning your tours.

ITRS describes both trails (per segment) and complete routes/tours

Trails (per segment)

For a trail the technical difficulty and exposure are rated.



That is done for each trail segment to account for the fact that trails not purposely built for mountain biking can be inhomogeneous in their difficulty.

Both, shared use and Bike-Only trails, are rated with the same criteria.

Routes/tours

For a route also the endurance requirements and the wilderness are rated, in addition to technical difficulty and exposure of the trails on this route.



The ratings according to the four aspects are combined in the "ITRS route pie" to describe the requirements of the route.

As aid for clear identification of the levels in low light conditions and for color blind, dots are added in the "ITRS route pie" e.g.



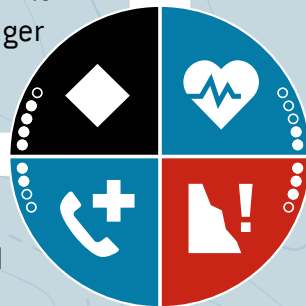
Reading example of the ITRS “route pie”

Technical Difficulty – riding skills required

- A tour with technical difficulty level black has a significant share of trail sections which require expert level riding skills, e.g., fully automated, precise and instinctively fast adapting of body position and brake power, front pivoting, bunny hop, dropping
- On hiking trails you have to expect very steep gradients, high and rough obstacles, very tight switchbacks and loose material
- In bike parks you have to expect large jumps which are not rollable and not predictable, as well as very demanding TTFs (very high drops, very narrow skinnies, etc.)
- Less than 5% of the distance of the tour could be even harder and you may need to push short sections, but those won't be longer than 500 m each.

Endurance – fitness level required

- In order to be fit enough for a tour with endurance level blue occasional training is required
- For example, you go on day tours regularly
- Please check the detailed description of the tour for the total distance, amounts of climbing and descending to understand why the tour has been rated blue for endurance



Wilderness – tour planning required

- For a tour with wilderness factor blue some planning is required
- You will not be in areas of civilization but, e.g., in a forest or small mountains away from settlements
- You have to carry some water and snacks
- In case of an accident, self-evacuation can take some time
- Consider to have no phone reception in some parts of the tour
- Wild boars or venomous snakes could be met, or you may need to cross meadows where cows and their young ones are grazing

Exposure – are you afraid of heights?

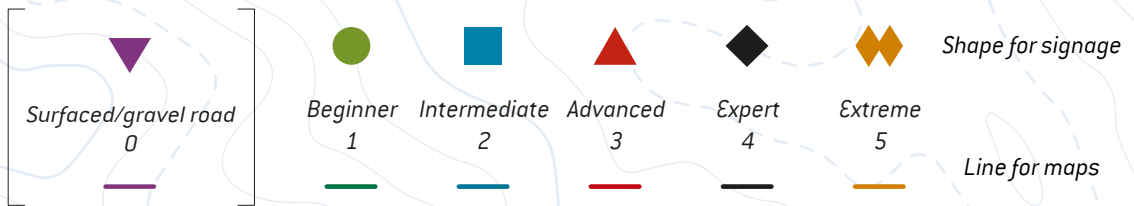
- On this tour at least one spot is present where the exposure is rated red
- That means that a fall off the trail at this spot is life threatening. It could be very steep terrain right next to the trail that further down turns into a vertical drop
- If you are afraid of heights you may be challenged walking this sections since you may feel vertigo
- If you are not, you have to be very cautious riding such a section, even if you do not realize the exposure since the trail may be wide
- Please check the map of the tour to know where the exposed sections are located

Shared use vs bicycle only trails

Shared Use Trails

Can often be more technical trails that have rougher and more natural trail surfaces featuring a high percentage of natural organic features: rocks, roots, drops and steeper gradients. Speeds are generally lower than those on bike only.

Most common characteristics: natural/legacy, technical, shared use, 2 ways, hand built.

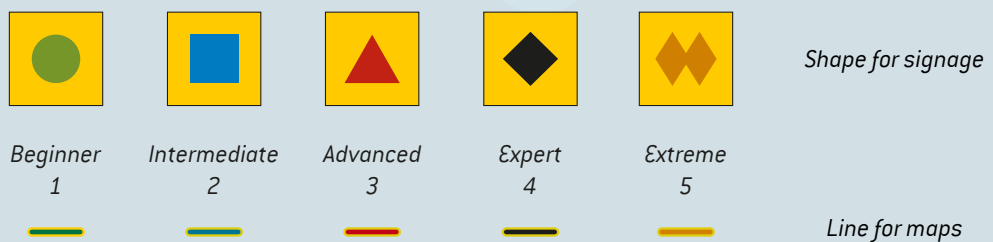


Bike Only Trails



Flow Trails are created with smoother and typically wider trail surfaces and feature a high percentage of berms, jumps or pump features. Overall speeds are higher than those on shared use trails.

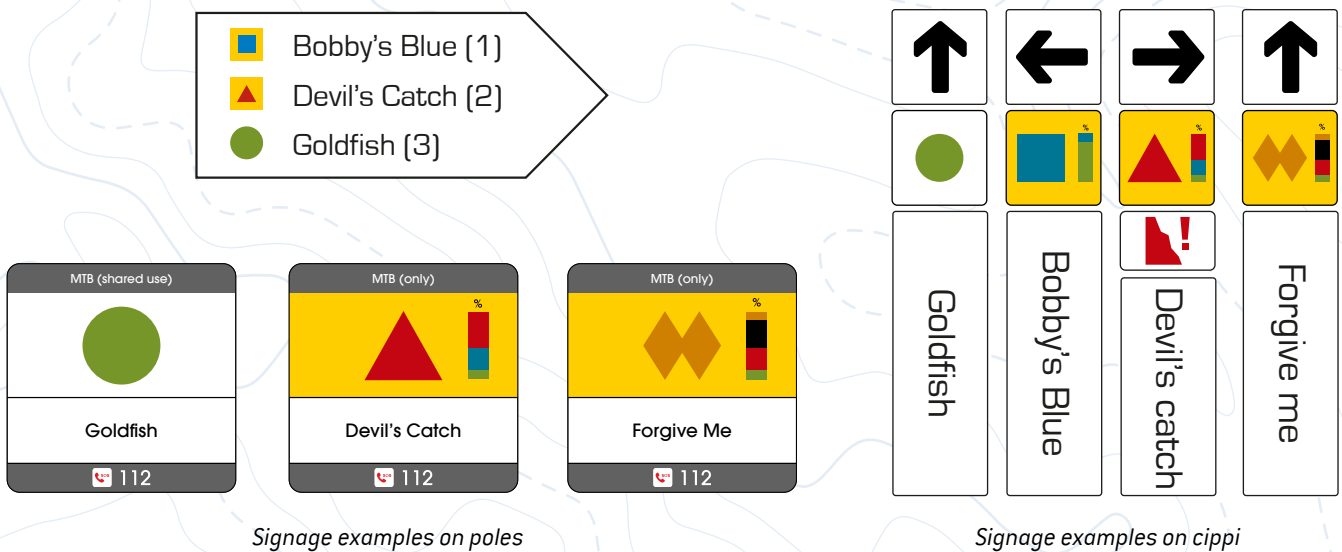
Most common characteristics: purpose built, bike only, flow, 1 way, machine built, bike park/trail network.



Bike trails vs Bike Routes

Why is it important to differentiate between trails and routes?

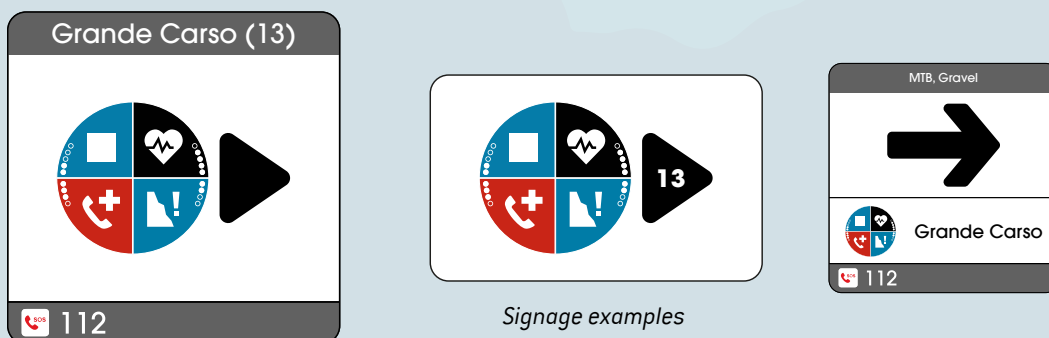
In a trail network the rider is in a possibly intricate mesh of **trails** and at every intersection needs to quickly identify the trails that he/she can ride given his/hers technical level, therefore the combination of different colours associated with a specific logo help him/her to quickly pick a trail and keep riding. Bike only trails are also easily identifiable by the yellow background.



Signage examples on poles

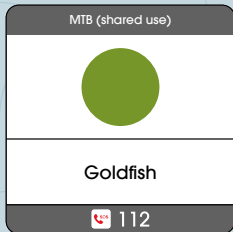
Signage examples on cippi

In a **route** scenario the rider commits to a specific route identified by a number/name and then follows that same route for its entirety. For a quick and easy identification at trail/road crossings the route direction is given by the ITRS pie chart with the arrow (below).

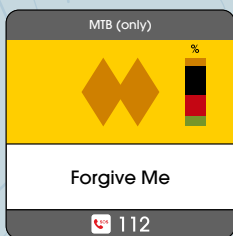


Signage examples

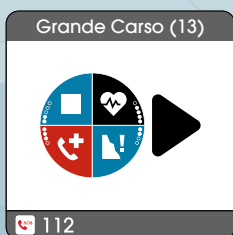
Reading example



A green/beginners technical level shared use trail called "Goldfish".



An orange/extreme technical level MTB Only trail called "Forgive Me". The % bar shows that this trail has overall a small percentage of technical level orange and green with a much greater length shared almost equally between red and black levels.



This sign marks an offroad cycling route number 13 called "Grande Carso". The four ITRS aspects of this route are: Technical level blue/Intermediate, Endurance black, Exposure blue and Wilderness red. This means at least a spot has exposure red on the route and technical level is up to blue (with up to 5% that can be of higher technical difficulty in stretches shorter than 500 meters).



A segment with red technical difficulty level, that is part of a Bike Only Trail called "Crabs". This sign is the compact version to mark technical difficulty at the segment level (S1 means segment 1 of the trail named "Crabs").



This can be used when a segment of a higher tech level is included in a route with an overall lower technical level (up to 5% of trails can exceed the route rating if segments are shorter than 500 meters). The red exposure sign also points out this point has red level exposure.

Additional graphical elements

Additional symbols (on signposting and on maps) can be used to communicate additional informations like for example that a trail contains purpose built jumps.

The icon represents the kicker-part of a jump since there can be various landing styles, but all jumps have similar kind of kickers.



On shared multi-use trails the trail courtesy logo can be found to remind all users the correct way to yield.



Additional graphical elements: Routes

A bike **route** consists of multiple bike **trails** combined together and it might also include segments on forest roads and/or paved roads.

ITRS suggests to use the pie icon in route signage like in the examples below.

This application has been pioneered by the destination Garda Trentino.

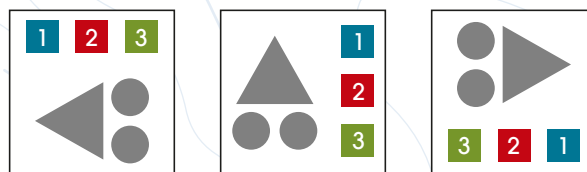


Example of ITRS Implementation in the Lake Garda area in Trentino (Italy)

Additional graphical elements: Routes

In other scenarios you might also find the bike route logo below (vastly used across different European countries) that indicates a bike route while the number indicates the route number.

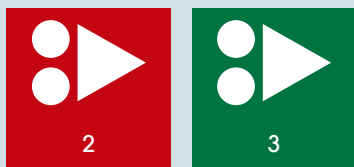
In countries and/or regions where this logo is not already used the ITRS suggestion is to use it as follows with the logo in grey and with the squares of the different routes indicating the color of the overall route rating as determined by the hardest factor between trail difficulty, endurance, exposure and wilderness.



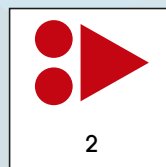
Signage examples (suggested)

Keep in mind that the bike route logo is used with different variations of the colour and therefore its meaning might be slightly different depending on the country.

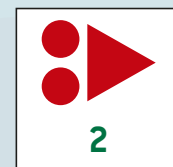
France and Spain for example use an inverted color scheme (white logo on coloured background) to mark Enduro trails where the color indicates the trail difficulty while the positive version (red logo on white background) indicates other informations not related to the trail difficulty.



Enduro trails (France & Spain)



Bike route longer than 80 km (France)



Bike route with trail difficulty green (Spain)

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