

## CASE STUDY - DOC BULLER KAWATIRI AREA (24-08-2011)

**PROJECT:** Heaphy Track Upgrade (completed in August 2011)

**DOC PERSONNEL:** Matthew Sledmore - Project Manager  
Track Upgrades

**CONTRACTOR:** Mal Hansen - Visitor Assets Ranger

### Track Description & Project Brief

The Heaphy Track is located in the Kahurangi National Park at north-west corner of the South Island of New Zealand. This track is one of DOC's designated "Great Walks" and also the longest at 78.4 kilometres. This track gets approximately 8000 walkers and bikers per year.

The upgrade was between the Heaphy and the Lewis Huts. This is an 8 kilometre section of which approximately 2 kilometres will have the *JakMat* used as the base.

The issues that have driven the upgrade were, considerable storm damage to the track in recent months combined with a predicted heavy upcoming walking and biking season. Mountain bikes were recently given use of track through the months of May to September. It was also decided to depart from historically used track building techniques and use methods and product now proven within DOC to improve track stability and reduce ongoing maintenance.

### Construction Steps

1. The ground surface was cleared and prepared by removing the general overburden to a track width of between 1.5 to 1.8 metres and down to reasonably soundbase.

2. Locally sourced aggregate, from the Heaphy River, was used as the sub base. It was applied in varying depths, dependant on the need to assure the soundness of the track surface. The sub base was compacted using the small machines used in construction (machinery used described below).



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3. The *JakMatEnviro* was laid, long side across (585mm) in a continuous strip up the middle of the prepared track.

4. The mats were pegged using 10mm deformed steel rods. Six meter lengths of this rod were cut into 300mm length and a 50mm right angle return put on one end. The pegs were driven into the sub base through the holes on one side of the mats cell. With the 50mm return, on top of the peg, this enabled it to span across the base of the cell and very securely attach the mat to the ground. This pegging will eliminate the potential for the mat to pump (move up and down with people and bike traffic) which can lead to, soft and water sodden base aggregate to move up through the mat and cause premature deterioration of the track surface. The total number of pegs used for the 2 kilometre upgrade was 720.

5. The filling of the *JakMatEnviro* mat with the aggregate and forming of the crown topping layer. The crowning layer ranged in depth from 150mm thick in the middle of the mat tapering down at the sides of the prepared track.

**Note:** There were sections of the track where the track went through cuttings which meant the track was formed in something resembling the bottom of a bathtub. In these sections, the bottom of the track was filled with aggregate so a flat base was created onto which the *JakMatEnviro* could be laid. The sides of the JakMats were contained by the walls of the track. The mats were then filled, topped flat, and compacted.

### Machinery Employed

The digger was a Hitachi 1.7 tonne. The carry trucks were Yamaguchi WB07 (weighing 440kg and a payload of 700kg).

### Summary

The outcomes that the DOC personnel are expecting from the upgrade are:

- A better track than previous with lower ongoing maintenance in time and cost.
- To be able to cope with the more extreme weather patterns now experienced and keep the tracks in better condition following these.
- A better integrity to the track surface and as a result more permanent.
- Gravel (aggregate) is maintained on the track and not removed with rain events.
- That the public using the Heaphy track, both walkers and bikers, are positive about the upgrade and have their wilderness experience enhanced.



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