



Australian Cycling Conference Adelaide 18 & 19 January 2010

Mapping mountain bike trails – Eagle Mountain Bike Park, South Australia

Adrian Billiau¹ and Paul Corcoran¹

¹ School of Natural and Built Environments, University of South Australia

Adrian Billiau
School of Natural and Built Environments
City East Campus
University of South Australia
Ph 02 6963 5554
Mob 0415 413 000
bilam002@students.unisa.edu.au

Paul Corcoran
School of Natural and Built Environments
City East Campus
University of South Australia
Ph 08 8302 1852
Mob 0437 652 359
paul.corcoran@unisa.edu.au

Abstract

This study focuses on the sport of mountain biking, specifically the mapping of mountain bike trails. It builds upon the work of Karas and Corcoran (2009) that investigated using quantitative methods for applying a difficulty grading system to mountain bike trails. To achieve their grading system, the mountain bike trails and obstacles were surveyed using the combination of a Total Station theodolite and a Real Time Kinetic Global Position System (RTK GPS) that produced centimetre accuracy.

But such high accuracy does have a trade-off in the fact that the surveying tools utilised are expensive (e.g. RTK GPS in the region of \$80,000) and can be labour intensive (e.g. theodolites tend to require two people). In addition, centimetre accuracy may be beyond what is required for grading as trails can be indistinct, vary in width and obstacles in size.

Therefore, the study presented in this paper aims to identify cheaper and quicker alternative methods of data capture for mountain bike trails and compare the merits of each whilst still maintaining the necessary levels of accuracy needed for the Karas and Corcoran (2009) grading system. The surveying tools used included a Trimble PRO-XRS differential GPS, a Trimble GeoXM Handheld GPS and an Inertial Navigation System/ GPS.