

MARTIN HAIGH (\*) & SVETLANA GENTCHEVA-KOSTADINOVA (\*\*)

## GEOMORPHOLOGICAL IMPACT OF EROSION CONTROL MEASURES ON A STEEP COAL-SPOIL EMBANKMENT, PERNIK, BULGARIA

**ABSTRACT:** HAIGH M. & GENTCHEVA-KOSTADINOVA S., *Geomorphological Impact of Erosion Control Measures on a Steep Coal-Spoil Embankment, Pernik, Bulgaria*. (IT ISSN 1724-4757, 2007).

This geomorphological examination of the effects of two common erosion control strategies on a 17° coal-briquette spoil embankment at Pernik, Bulgaria, finds that while ground losses increase significantly with both slope length and slope angle, the forestation of an unvegetated slope significantly reduced inter-rill erosion (1.9 vs 7.0 mm yr<sup>-1</sup>) where mechanical protection with contour wattles did not (6.2 vs 7.0 mm yr<sup>-1</sup>).

However, both treatments inhibited the development of rills and gullies.

Over 6 years after the trees had been lopped to ground level and the wattles entirely removed, the depth of rill and gully incision remained significantly smaller on the sites that had been protected in previous times.

However, despite the presence of roots in the spoil on the former forest site, there was no significant difference between rill development here and on the mechanically protected slope.

**KEY WORDS:** Erosion control, Contour wattles, Forestation, Pernik (Bulgaria).

---

(\*) *Department of Geography, Oxford Brookes University, Oxford OX3 0BP, England.*

(\*\*) *Department of Ecology, University of Forestry, 1156 Sofia, Bulgaria.*