Rates of soil erosion in an Atlantic area of NW Spain

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Knowledge of soil loss rates by rainfall erosion under specified climate, soil, to-
pography, and management conditions is important for establishing soil conservation
schemes. In Galicia, a region with Atlantic climatic conditions in Spain, field obser-
vations over the last decade indicate that interill, rill and ephemeral gully soil erosion
may be an important sediment source. The aim of this work was to assess concentrated
erosion rates and to describe types of rills and ephemeral gullies and to determine their
origin, evolution and importance as sediment sources. Concentrated erosion was sur-
veyed on medium textured soils, developed over basic schist of the Ordenes Complex
series (Corunna province, Spain) from 1997 to 2006. Concentrated erosion took place
mainly on seed beds and recently tilled surfaces on late spring and by autumn or early
winter. During the study period erosion rates were highly variable and the following
situations could be roughly distinguished: a) No incision or limited rill incision, i.e.,
below 1 m^3ha^{-1}, generalized rill and ephemeral gully incision in the class of mean
values between 2 to 5 m^3ha^{-1}. This was the most common erosion pattern and c)
Heavy erosion as observed during an extremely winter period, between October 2000
and February 2002, with mean erosion figures about ten orders of magnitude higher
than before, thus between 20 and 50 m^3ha^{-1}. Thus, low values of soil losses are dom-
inant, but also large values of rill and ephemeral gully erosion occurred during the
study period.