TORRENT OF MANIVAL
WORKS ON DEPOSIT AREAS AND « V » DIKES

5th workshop of the working group 2 (WGII) « Hazards and disaster risk management in Mountains » of the Working Party on the Management of Mountain Watersheds (WPMMW) of the European Forestry Commission (EFC).
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CONTEXT

NUMEROUS EVOLUTIONS

STAKES
PROTECTION WORKS
TORRENT MORPHOLOGY

EBR (Risk watershed study) - 2016

V100 ≈ 30 000 m³
Capacity of the deposit area = 10 to 15 000 m³
Good downstream storage capacity but potential weakness at crossing points and road bridge
Impressive incision on communal section: -10 m since 1963 !!!
Doubts on stability of banks. Unpredictable consequences ...
The torrent of Manival on the alluvial fan

Section 1

1890

National road

torrent dikes
« V » dikes - 1929
Longitudinal section

Potential deposit at the apex of the cone
Consequences of deposit area

longitudinal section: evolution 1963-2016
Consequences of deposit area

Downstream incision
WORKS

OBJECTIVES

INTENSE FLOODING: Increase the storage capacity of the system
COMON FLOODING: Allow enough sediment to pass through

STRATEGY

INTENSE FLOODING:
- Increasing the storage capacity
- take advantage of regulation / storage on the cone upstream of the Deposit area -> allow divagation by leveling the dike at the apex of the cone -> reinforcement of V dikes

COMON FLOODING:
- Increase slope of deposit area background -> lateral channel + derivation work: experimental!
- In a second time: works on opening spacing
Longitudinal section

Potential deposit at the apex of the cone

- Lit Manival
- Lit Manival profil lissé
- Pente moyenne sur profil lissé
- Pente filtrée

Arasement digue RG
Rehausse : env. 3 m
L crête : 4 m
Talus côté cours d’eau 3H/2V
Talus côté terres : 2H/1V
Vol. storage = 15 000 m³ with I = 8%
Addition of a derivation (by-pass) structure + spillway
Remodeling Deposit area
Remodeling Deposit area