I PROMO SCHOOL 2010

Protecting Mountain Biodiversity

PARTICIPANTS PRESENTATION

Formation

November 2006

Degree certificate in

Land Defence and Idraulic Forest Maintenance of the Territory

With a thesis on

Vulnerability of soils at processes of flash flood in Gimillan Cogne

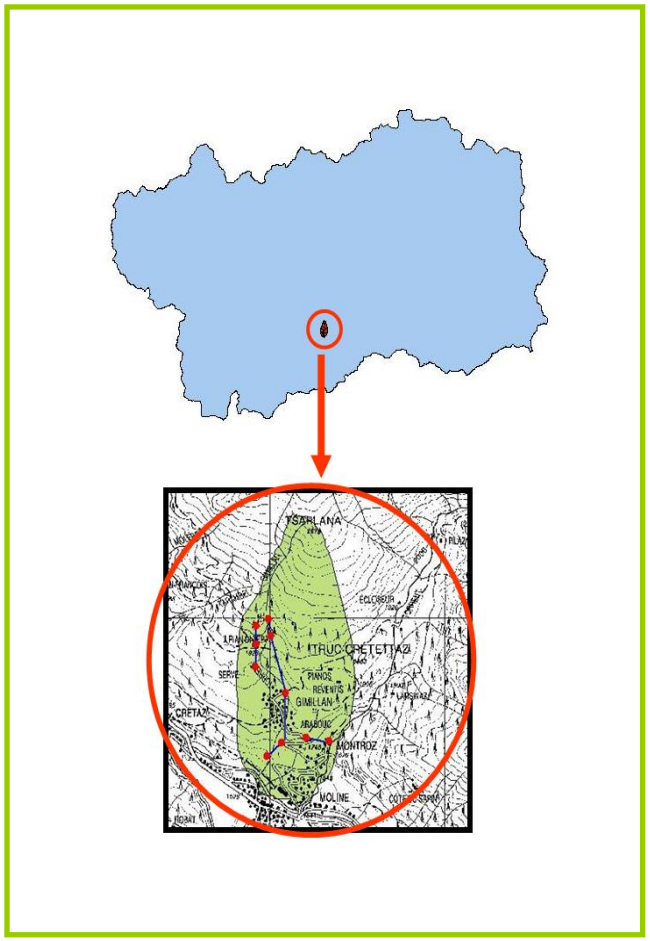
(Aosta Valley)

Purpose of this study was to evaluate the potential risk of soil loss by erosion due to flash flood phenomenon in relation to different types of covers that meet in the basin of the river Gimillan

Flash flood is the nearly immediate submersion of soil during intense precipitations and the flow on surface of big mass of water

As a marker of structural stability was evaluated the state of formation of stable structural units within the soil system

GIMILLAN (COGNE)



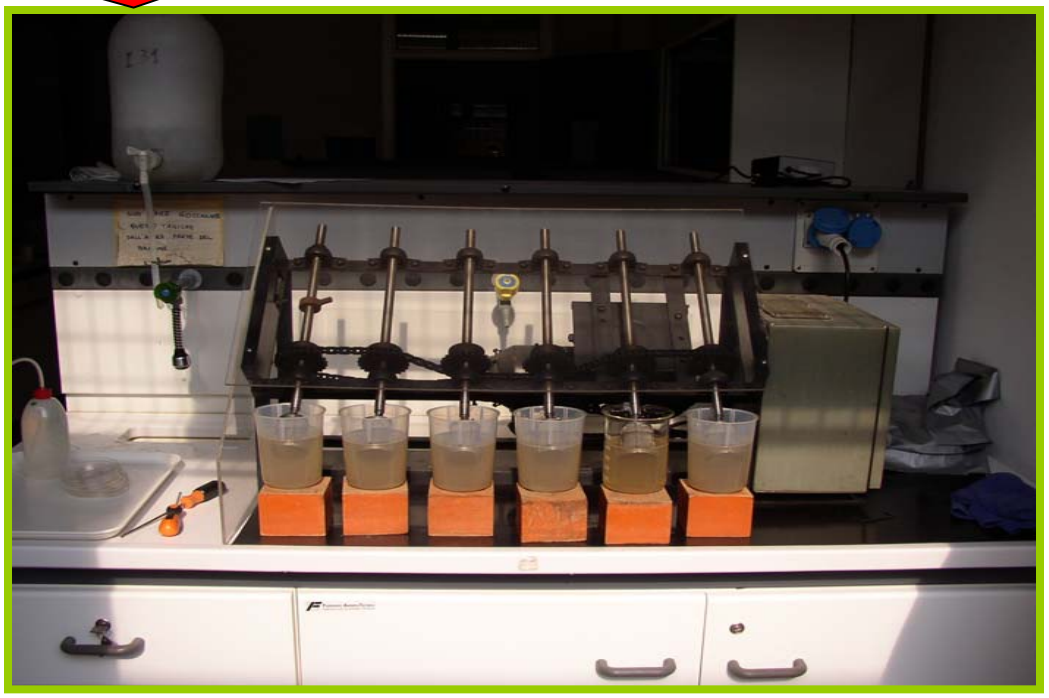
Surface: 301 ha

Precipitations: 764,7 mm

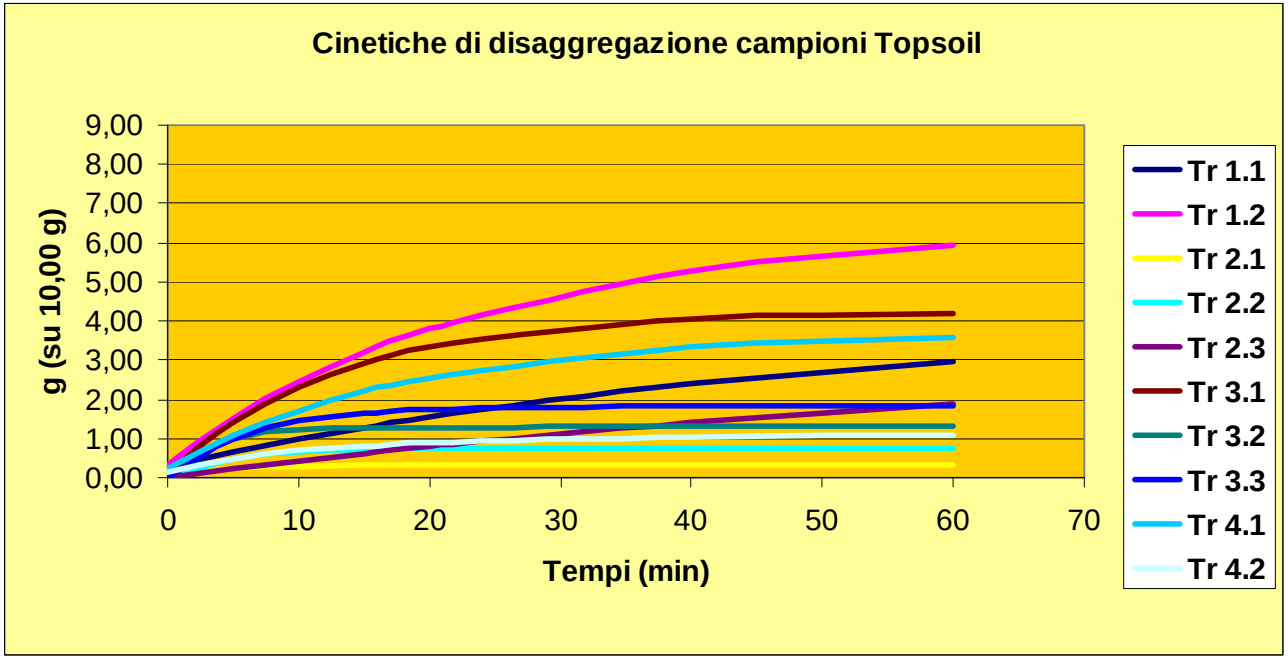
Year average temperature: 2,6°**C**

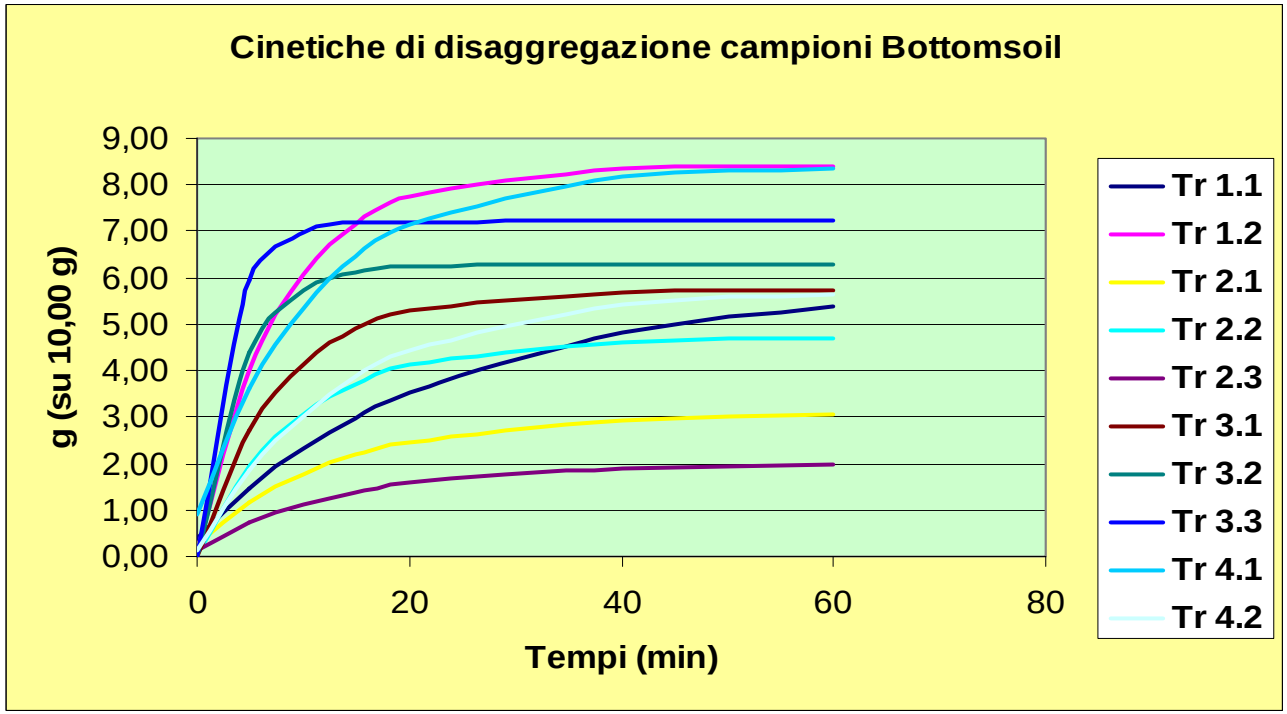
Chemical analisys

Physical analisys (WAS- WET AGGREGATE STABILITY INDEX)



Statistic elaborations


Cinetiche di disaggregazione campioni Topsoil
g (su 10,00 g)
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
1,00
0,00
0
10
20
30
40
50
60
70
Tempi (min)
Tr 1.1
Tr 1.2
Tr 2.1
Tr 2.2
Tr 2.3
Tr 3.1
Tr 3.2
Tr 3.3
Tr 4.1
Tr 4.2


Cinetiche di disaggregazione campioni Bottomsoil
g (su 10,00 g)
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
1,00
0,00
0
20
40
60
80
Tempi (min)
Tr 1.1
Tr 1.2
Tr 2.1
Tr 2.2
Tr 2.3
Tr 3.1
Tr 3.2
Tr 3.3
Tr 4.1
Tr 4.2

July 2009

Degree certificate in

Land Defence and Forest Maintenance of the Territory

With a thesis on

Pathological disturbances in some protection forests in Aosta Valley

Protective function against natural hazards such as rockfall, erosion, landslides and avalanches.

The stability of protection forest may be compromised by some biotic or abiotic disorders. The knowledge of these disturbances and their interactions, is the basis for proper management of these forests.

So the main objective is:

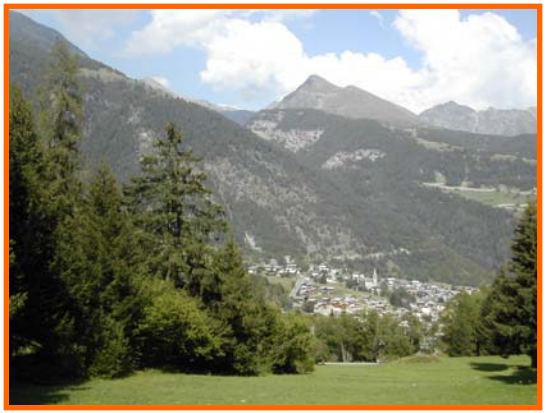
The census of the main biotic pathogens in some forests of *Pinus sylvetris* with a protective value in Aosta Valley.

The knowledge of the influence of some abiotic natural disturbances (fire and silvicultural cuts) on Heterobasidion annosum (sl) and Armillaria mellea (sl), especially as regards the abundance of inoculum.

Sites

1 site in Brusson

•Dajey → Thinning 1997



2 sites in Verrayes

•Menfrey → Fire 2006

•Vencorère → Fire 2005

Observations and samples(symptoms and signs, the vegetative or reproductive structures)

Laboratory diagnosis (molecular analysis)

•*Heterobasidion annosum* s.l.

•*Armillaria mellea* s.l.

The Forest Protection investigated are affected by many pathogens, some of which have never been reported before in the western Alps, although for the moment do not raise problems due to the small number of cases detected.

Rhytisma acerinum e *Cyclaneusma minus*

Lachnellula willkommii

Onnia tomentosa

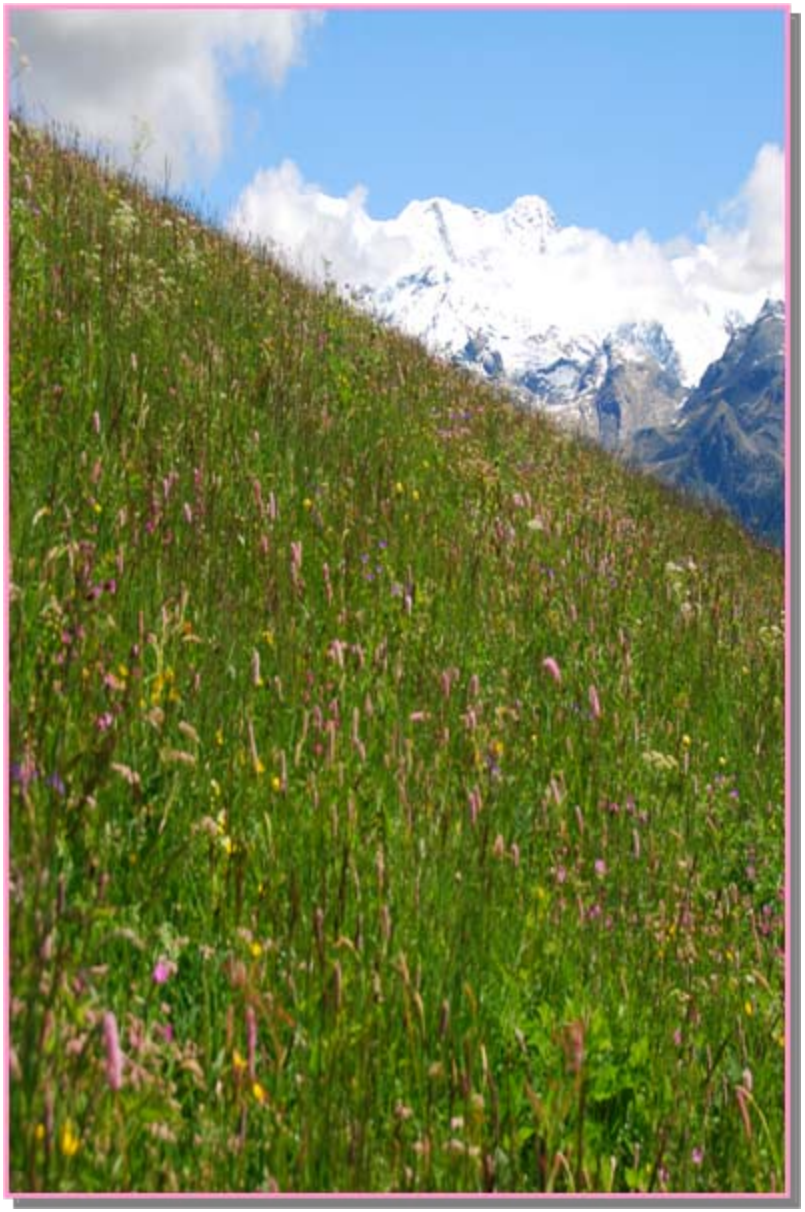
Leptoporus mollis

Fomitopsis pinicola

Coniophora olivacea

There is evidence that H. annosum s.l. and A. mellea s.l. are influenced by abiotic disturbances. The thinning appear to affect the inoculum of H. s.l. annosum, but not that of A. mellea sl, while fires influencing different inoculum of both fungi.

Research



July 2010

Scholarship at the DIVAPRA-Chimica agraria (Università degli studi di Torino)

Project NAPEA – Nouvelles Approches sur les Prairies dans l'Environnement Alpin

Effects of lands transformations on agriculturals soils

To study the theme of biodiversity we analyse the role of environmental conditions and management practices.

We also focus ours attention on the many issues arising from the work of setting up and building works on land like land transformations, construction of ski slopes, irrigation systems, etc..

Assessment of impacts

Assessment of soils qualities

Development of goods practises

Thanks for your attention