SILVICULTURE ON STEEP TERRAIN

In collaboration with

Sezione Nord Ovest

Foreign Study Tour to the North West of Italy (Piedmont and Aosta Valley)
6-9th June 2019
FORESTS IN ITALY

In Italy, forests cover about **11 million hectares** and occupy about **37.8%** of the national territory (State of Europe's Forests 2015): in the last 20 years the forest area has been constantly increasing, as in most European countries.

![Trends in the forest area in Italy (State of Europe’s Forests 2015)](image1)

Woods dominated by deciduous broadleaves are the most widespread, particularly those with deciduous species of the genus Quercus (Q. cerris, Q. pubescens, Q. petraea). However, woods with *Fagus sylvatica*, *Castanea sativa*, *Ostrya carpinfolia*, *Picea abies*, *Quercus ilex*, are very important in terms of surface area. For further details on forests in Italy, see [https://www.reterurale.it/flex/cm/pages/ServeAttachment.php/L/IT/D/3%252F0%252Ff%252FD.eb47927cb0683580b988/P/BLOB%3AID%3D16824/E/pdf](https://www.reterurale.it/flex/cm/pages/ServeAttachment.php/L/IT/D/3%252F0%252Ff%252FD.eb47927cb0683580b988/P/BLOB%3AID%3D16824/E/pdf)

![Forest area classified according to the main species (National Forest Inventory, 2005)](image2)
Most of the forests are located in the mountain areas: in the Alps to the North and in the Apennines in the Centre and South. This terrain obviously involves many difficulties for silvicultural operations, with about 40% of the forests located in areas with slopes of more than 40%.

Forest area classified according to the slope classes (National Forest Inventory, 2005)

Forest area classified according to silvicultural treatment (National Forest Inventory, 2005)
SILVICULTURE IN ITALY

In Italy, coppice management is widespread and comprises about half of the forests under active silvicultural treatment. In these coppice forests, the main product is firewood (poles for chestnut coppices).

In high forests, clear cutting has not been applied for many decades and now it is forbidden by the new forest law (Legislative Decree No. 34/2018).

The "naturalistic" silviculture has a long tradition in Italy, thanks above all to the work of SUSMEL and his definition of the treatment of unevenaged forestry. This type of silviculture is traditionally applied only in the North East (Trentino and Alto Adige), while in the last decades in Italy there has been a wide discussion on "naturalistic silviculture" and the differences from "Systemic silviculture", as theorized by CIANCIO.

Very often, however, especially for politicians and public officials in the environmental sector, "naturalistic" silviculture is associated with the absence of interventions or very light, economically passive interventions.

Pro Silva Italy was founded in 1996 and over the past 22 years has tried above all to investigate the issues related to the management of the woods. The main topics covered by Pro Silva Italy have been:

- the enhancement of wood products;
- the attention to the ecological dynamics and peculiarities present in the various forest ecosystems;
- the management methods of coppice woods
- the methods of managing forests of direct protection;
- the management methods of riparian and lowland forests.
The regional forest area is about 968,400 ha and represents about 38.1% of the regional area.

Between 1980 and 2015, the forest area increased by about 40%, especially as a result of the spontaneous colonization of marginal agricultural and pastoral areas progressively abandoned in hilly and mountainous territory.

If the new forest cover provides an important contribution to the storage of CO₂, on the other side, with the replacement of pastures, cultivations and open spaces, it is significantly changing the landscape, biological diversity and conditions of usability.

According to the regional forest map, 60% of the forest area consists of 4 categories among the 21 identified: Chestnut forests (23%), Beech forests (16%), Robinia forests (12%), Larch and Arolla pine forests (9%).

Among the various elevational zones, the maximum distribution of forests is in the mountains (about 72% of the total); the remainder is found in the foothills (about 18%) and in the plains (about 10%).

In this regard, instead of preserving the naturalness of the woods, in some areas (such as riverbanks), a large management problem is caused by invasive alien species.
AOSTA VALLEY

The Aosta Valley is a densely populated mountainous area in which interaction between natural hazards and human activities has been shaping the development of settlements and infrastructure for centuries. The forests (98328 ha according the National Forest Inventory 2015) cover about 30% of the surface area (326088 ha): excluding glaciers and rocky areas, the percentage of forest area would rise to about 50%.

![Trends in the forest area in Aosta Valley](chart1.png)

*Forest area classified according to the main species in Aosta Valley*

The Aosta Valley forests are characterized by a high percentage of mixed forests, with about the 57% of the area with two or more principal species.

![Forest area classified according to the main species in Aosta Valley](chart2.png)
PROGRAMME OUTLINE

First day – Val Susa (Piedmont)

- LOCATION: Salbertrand Great Forest (Oulx – TO)
- FOREST TYPES PRESENT: larch woods, spruce and beech forests, beech woods
- TOPICS:
  - mountain coniferous forest management
  - forest management in protected areas (Natura 2000)
  - wildlife management
  - forest mechanization
  - buying and selling of local wood
- EXCURSION NOTES:
  The visit will be closed with a concert of a traditional Occitan music band of the Val Susa.

- INSIGHTS:
  The Alta Valle Susa Forestry Consortium (CFAVS), originally founded in 1953, has been transformed from 1 January 2002 into a special consortium company, regulated by the member municipalities according to what the art. 31 of TUEL 267/2000 and with reference to the R.D. 3267/1923. The Consortium performs a public service with business relevance, and it is composed of 14 Municipalities belonging to the Alta Valle Susa Mountain Community.

With respect to the purposes and the consortium activities envisaged in art. 1 and 3 of the Articles of Association, the current actions of the Consortium are:
1. management of municipal forests (designing and updating plans for the forest properties of the municipalities, execution of silvicultural operations with in-house machinery);
2. management of mountain catchments (monitoring of existing hydraulic works, updating descriptive data sheets, designing catchment plans);
3. forestry operations (thinning, reforestation and regeneration cutting, slope management, ordinary maintenance of the territory, any other intervention of interest for the consortium municipalities);
4. technical assistance (Maintenance and restoration projects for the forest hydraulic network, roads, rangeland structures, and any other intervention required by the consortium municipalities. Particularly important are the actions for land maintenance and hydraulic works that preside over the stability of the slopes and the hydrographic network);
5. institutional activities.

Second day – Aosta Valley

- LOCATION: Saint Rhémy protection forest
- FOREST TYPES PRESENT: Plantation of larch in Mountain and sub-alpine level, sub-alpine spruce forest
- TOPICS:
  - Silvicultural assessment and intervention in sample areas of forests of direct protection
  - ancient protection artifacts
- EXCURSION NOTES: an excursion is planned in the mountains with about 1,5 hours of walking to reach the old constructions for slope protection, with a difference in height of about 350 m.
  Those who do not feel like facing this walk, can wait for the return of the group to the sample areas or in the characteristic village of Saint Rhémy, which they can visit.
- INSIGHTS:

Mountainous areas are associated with a large number of hydrogeomorphic hazards, including rockfall, landslides, snow and rock avalanches, and debris and earth flows. Forests may provide direct protection to human settlements and activities from some of these hazards, by preventing their occurrence (eg by snowpack stabilization) or mitigating their intensity (eg by slowing or blocking falling rocks). This type of forest is referred to as a direct protection forest (DPF).

The extent of forests managed for their protection services is included in the 1995 Montreal Process, the Helsinki Process, and the Forest Resources Assessment of the Food and Agriculture Organization as an indicator of sustainable forest management in mountain ecosystems. This service has long been recognized in areas with exposure to hazards, such as the European Alps, and this has resulted in bans on timber harvesting since at least the 14th century.

Currently, DPFs must be identified and undergo special management under national or regional forest regulations in Austria, France, Germany, Italy, and Switzerland, as well as Greece, Japan and Turkey. In other parts of the world, the generic role of forests in soil protection or hazard mitigation is recognized, but formal identification of DPFs is surprisingly lacking, even in areas with a high risk of hydrogeomorphic hazards, such as winter resorts in North American mountain areas.

The effectiveness of DPFs depends not only on their location, but also on elements of forest structure that maximize physical hazard mitigation, such as density, tree diameter, and canopy cover. Moreover, like all ecosystems, DPFs are subject to natural disturbances—including wildfires, windstorms, herbivores, and wood-boring insects—that can temporarily disrupt their structure and therefore their functionality. Disturbances are increasing in magnitude and frequency across the Alpine region and the response of ecosystem functions to single-pulse or interacting disturbances can follow various trajectories: short-term change and recovery, gradual continuous modification, or abrupt transition to a different. The speed, direction, and mode of ecosystem response depends on ecosystem resistance and resilience, and on the type, frequency, time of occurrence, intensity, and extent of the disturbance, considered either as a single event or integrated over a disturbance regime.

An undisturbed DPF is not automatically functional, because age, site, or other limitations can result in forest structures being temporarily or permanently unsuitable to mitigate hydrogeomorphic hazards. However, rapid assessment and urgent action are often needed following sudden structural changes by natural disturbance agents. Building on previous knowledge on optimal stand structure in DPFs, the Aosta Valley region aimed to assess the effect of abiotic and biotic disturbance agents on the current functionality of DPFs, measured by their vegetation cover. Particularly, has been integrated spatially explicit information on DPFs, time-labelled perimeters of natural disturbances by wildfire, wind and snow damage, avalanches, and insects for variable time periods in the last 50
years, and classified remotely sensed land cover into forested, herbaceous, and non-vegetated areas. The overlay of such information allowed us to assess the temporal recovery of forest structure following different disturbances, model the effect of disturbance size, time of occurrence, and other environmental variables on DPF effectiveness, and prioritize DPF restoration.

During the past decades, the importance of the forests as a protection against natural hazards in Aosta Valley, and more in general in the whole European Alps, has increased. Remote valleys, that were formerly avoided during winter, are now expected to be permanently accessible for tourists, settlements have been spreading into areas that were considered unsafe and the amount of transport crossing the Alps have strongly increased. The forests that directly protect settlements, railways, main roads and socio-economical infrastructures represent a priority in the forest and landscape management at the regional scale since the direct protective role of forests needs to be efficiently and continuously effective. Protective forest mapping is the first step of a sustainable long-term silvicultural management. Starting from a digital terrain model (DTM) in a raster format with a spatial resolution of 10 m, other numerical maps and forest information, a regional map (1:10000) of the forests that play a direct protection has been developed. The forests that potentially play a protective role and the forests that play a potentially direct protective role cover represents respectively 79.8% and 42.7% of the forest cover.
Third day – Val Sessera (Piedmont)

- LOCATION: Bocchetto Sessera
- FOREST TYPES PRESENT: beech forests (habitat NAT2000 9110 Luzulo-Fagetum beech forests)
- TOPICS:
  - Forest planning in mountain areas
  - Management of aged beech coppices
  - Forest management in Natura 2000 areas
  - Silvicultural interventions for the protection of rare endemic species (*Carabus olympiae*)
- EXCURSION NOTES:
- INSIGHTS:

The emblem of the Oasi Zegna nature park in the Biella Alps in Piemonte has always been the splendid *Carabus olympiae*, an endemic species of beetle discovered near Bocchetto Sessera in summer 1854 by Olimpia Sella, cousin of the famous entomologist Eugenio Sella. Having been close to extinction in the ‘90s due to excessive capture by collectors, it is now the focus of a LIFE project to safeguard it and improve its habitat (LIFE CARABUS). Funded by the European Community and coordinated by Ermenegildo Zegna Group in collaboration with Regione Piemonte, University of Turin, D.R.E.Am. Italia soc. coop. Agricolo-Forestale and Comunità Montana “Val Sessera, Valle di Mosso e Prealpi Biellesi”, this innovative project is an integral part of LIFE Natura and aims to build a new model for forestry management, environmental protection and development of alpine rural areas. The theoretical plan of the project initiated on 1 June 2012 collected information on the species and its habitat using a network of monitoring stations (entomological and forestry). In 2nd half of 2013 the project entered the practical phase and implemented forestry and grazing management measures to improve the beetle’s habitat, the biodiversity of the area and its landscapes. The project organizes special initiatives focusing on the territory for visitors to Oasi Zegna and also addresses the general public and schools online.

PROGRAMME TIMINGS

Thursday 6th June 2019

Delegates should make their own way to the hotel and check in.

18.00 - visit to Turin (optional for people who arrive in time)
20.30 - dinner - Ristorante Colapasta, Turin https://www.ristorantecolapasta.it/menu/cucina/
23.00 - Return to Hotel – Blu Hotel, Turin www.bluhoteltorino.it

Friday 7th June 2019

08.30 - Depart to Alta Valle di Susa (Alberto Dotta - Pier Giorgio Terzuolo)
09.30 - Visit spruce and larch forests in the Gran Bosco di Salbeltrand (Cima Bosco)
13.30 - Lunch (small packed lunch with drink prepared by hotel/Pro Silva Italy)
14.00 - Visit at Gran Bosco di Salbeltrand (continuation)
16.30 - Piedmont party / “merenda sinoira”. A concert by the Panaperde group including music, Occitan dances and dinner.
20.00 – Depart to hotel
21.30 – Return to hotel

Saturday 8th June 2019

08.00 - Depart to Aosta Valley (Corrado Letey - Jean Claude Haudemand)
10.30 - Visit at protective Forests in St. Rhémy (with a breakfast provided by hotel/Pro Silva Italy)
15.30 - Lunch (Foyer de Fond di Saint-Oyen)
16.30 - Travel to hotel
19.00 - Return to hotel
23.00 - Return to hotel

For the excursion in Valle d’Aosta all the participants must be able to walk for about 1 and a half hours uphill (around 350m climb) on a mountain path.

Sunday 9th June 2019

08.00 - Depart to Valsessera (Roberta Berretti - Giorgio Vacchiano)
10.30 - Visit at beech forests in Bocchetto Sessera - (Life Project Carabus), with a breakfast provided by hotel
14.30 – Quick lunch at mountain refuge (buffet)
15.30 - Visits at beech forests in Bocchetto Sessera (continuation)
16.30 - Depart to hotel/airport (?)
19.00 - Return to hotel/airport (?)

HOSTS

Pro Silva Italy
WEATHER CONDITIONS, CLOTHING AND FOOTWEAR

Average temperatures during June in the region are mid-teens Celsius with lows of 9°C and highs of 22°C. Rain is possible so please come prepared for possible rain showers with waterproof clothing. Suitable footwear for walking is essential. The field visit to Valle d’Aosta will involve an uphill walk for approximately one and a half hours.

Olux (Valle di Susa): medium temperature in June is 14.8 °C (58.6 F), min temperature 9.1° C (48.4 F), max temperature 20.6 (69.1 F), rainfall 88 mm

Valsessera : medium temperature in June is 16.9 °C (62.4 F), min temperature 11.9° C (53.4 F), max temperature 21.9 (71.4 F), rainfall 105 mm

St Rhemy (Valle d’Aosta): medium temperature in June is 12.9 °C (55.2 F), min temperature 7.8° C (46.0 F), max temperature 18 (64.4 F), rainfall 108 mm

TRAVEL INFORMATION

Please make your own way to the hotel in Turin.
We will be staying in the same hotel for all three nights.
The bus will be with the party for the whole trip and will return to Turin/airport on Sunday 9th June at the end of the visit.

ACCOMMODATION

We will be staying at the same hotel all three nights. Blu Hotel, Turin www.bluhoteltorino.it

We have made a provisional reservation. We have reserved twin rooms as singles would be too expensive. Please indicate on the form if you have any preferences about who you would like to share with – otherwise we shall allocate people to share rooms by gender and using alphabetical surname order as a guide.

BUDGET

The fee to attend is £225 per person.

The fee includes:-
- 3 nights’ accommodation (Thursday, Friday and Saturday)
- 3 breakfasts (Friday, Saturday and Sunday)
- 1 packed lunch on Friday and two buffet lunches on Saturday and Sunday
- All bus transportation from the hotel to the field visits each day
- Excursion guides
- Preparation and organization expenses
- A traditional Piedmont party “merenda sinoira” on Friday 7th June including music, dancing and dinner.
Delegates will need to purchase their own evening meals at the restaurants on Thursday and Saturday evenings. Please allow approximately 35 euros per evening.

Delegates will need to make their own way to the hotel on Thursday 6th June.

If you require us to reserve you an extra night at the hotel on Sunday 9th June, please advise. This will be an additional cost.

The fee to confirm booking the accommodation costs are to be paid directly to CCFG in advance of the meeting.

CONTACT DETAILS

Emergency telephone number for police, fire brigade or ambulance is 112.

International telephone code for Italy is +39

Organisers / CCFG Contacts

Bill Mason – Chair – bpmason@blueyonder.co.uk – 07941 938992

Mandy Clinch – Administrator – administrator@ccfg.org.uk – 07730 373933

REGISTRATION

In order to register to attend this event, please complete the attached registration form and send it by email to the organisers, CCFG GB, Mandy Clinch at administrator@ccfg.org.uk. DO NOT BOOK YOUR TRAVEL AT THIS STAGE.

Deadline for completed registrations is Monday 25th March 2019.

PAYMENT

Once we have received your application form, we will send you an invoice confirming the amount you should pay, the method of payment and the date by when the amount is required.

We require all payments in advance.

Deadline for receipt of payments is Monday 15th April 2019.

Refunds are at the discretion of the organisers.
REGISTRATION FORM

CCFG Foreign Study Tour to Italy 6-9th June 2019

Please complete one registration form per person attending.

Delegate Details

First Name: ........................................ Surname: ............................................................
Tel: ........................................................ Mobile: ..............................................................
Email: .................................................................................................................................

Accommodation Preference

Please confirm the name of the person with whom you wish to share so we correctly allocate rooms. Otherwise we will allocate rooms by gender and alphabetical order of surnames.
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Travel

Please advise us of your travel arrangements. DO NOT BOOK YOUR TRAVEL.

☐ Plane  Departing from ........................................ Time ..............................................
             Arriving at ........................................ Time ..............................................
             Flight Number ........................................ Date ..............................................

☐ Car  Estimated arrival time at Hotel / another location?..............................................

☐ Other ..............................................................................................................................
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Dietary Requirements

Please tick one only.

☐ No special dietary requirements  ☐ Vegetarian
☐ Pescetarian  ☐ Vegan
☐ Other, please specify ...............................................................  
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Payment

We will invoice the delegate above with the cost of the conference fee and the accommodation. If you require that we invoice your organization directly, please confirm the correct details below.
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Receipt

Do you require a receipt or letter of confirmation of your attendance on this event? We will provide this at registration.

☐ Yes  ☐ No

Other

Please be aware that we will be walking off track on uneven ground during this event. Please bring appropriate footwear suitable for these conditions. By signing this registration form you accept your own personal liability in the unlikely event that you should have an accident. You should ensure that you have suitable insurance and health cards.

If you have any additional requirements, please advise us.

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Please send completed application form to Mandy Clinch, CCFG’s Administrator
administrator@ccfg.org.uk

Deadline 25th March 2019