

COST Action EuroCoppice

1st MC & WG Meeting, Tuscany, February 2014

Field Trip – Coppice utilization and products – Monday, February 24th, 2014

The field trip will introduce participants to a typical coppice-dominated landscape in the Appennine mountain of Tuscany, Central Italy. Starting from Florence, the group will go through the rich Pistoia plain, covered with nurseries (ornamental and garden plants) due to its peculiar position and climate. Nurseries generate a large demand for coppice products, especially stakes and posts. As we climb towards the mountain tops, we shall see vineyards and olive groves first, then the typical succession of tree species, all managed as coppice: oak and locust, chestnut, hornbeam and finally beech.



Ice and iron

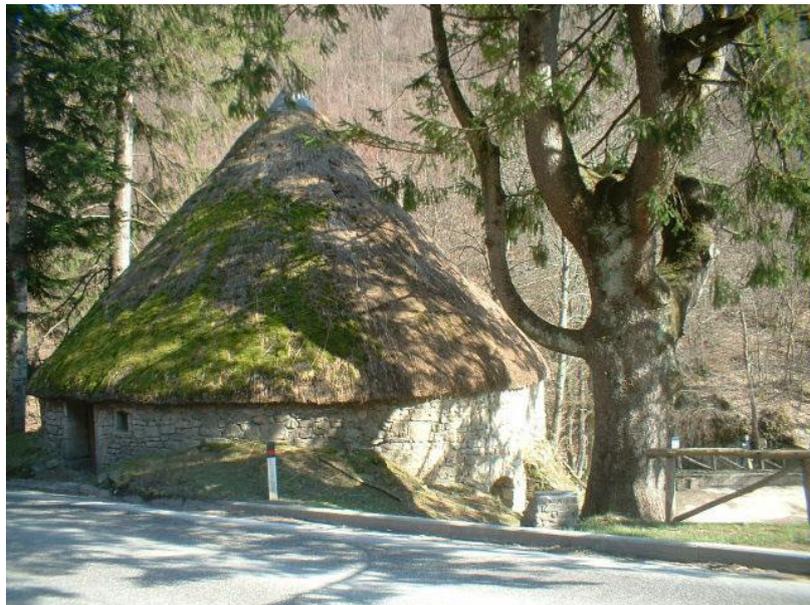
In particular, we'll climb up two valleys, the Valley of the Reno river (yes, the same name as the Rhein, just about 100 times smaller) and that of the Lima river. These two valleys are dominated by coppice, and were shaped by their peculiar history...

The "Ice Age" in the Reno Valley

The Reno valley is very narrow, and it receives very little sun light during winter. For this reason, the Ice industry flourished here during the 1800s. At that time, and well into the early 1900s, local people cleared fields on both river banks,

which they flooded in winter by building temporary dams across the Reno. As a consequence, the river would flood these fields with 30-40 cm of water. The water would freeze, and then workers would cut the ice in blocks and move them to the store houses, consisting of large holes in the ground protected by stone walls and thatched roofs. They would pack the ice and then sell it to the Florentine hospitals, butcheries and other industries during the summer

On the way, we'll see many old ice fields, as well as the ruins of several ice store houses. Just at the entrance of the valley we'll see a fully restored Ice store house.



The “Iron Age” in the Lima Valley

Once in Pontepetri, we'll enter the Lima valley. This has been a busy centre for iron production since the middle ages. In the 1400s, the area was owned by the Rospigliosi family (they built several palaces in Florence), who also owned the iron-rich mountains of the Elba island. Mines had been used on the island since Etruscan times (i.e. from 700 BC) and by 1400s there was very little wood left on the island for the smelters. Besides, water was never very abundant on the Elba island. In contrast, the Lima valley was rich with wood and abundant water. In fact, the water in the Lima is extremely pure, which would allow forging high-quality iron. Therefore, the Rospigliosi started moving iron ore from the Elba island to the Lima valley. Some of their 1400s forges has been in operation until the 1900s, virtually unchanged. Most – however - were converted into steel factories in the industrial age, and operated until right after WWII producing a variety of ordinance (e.g. SMI), pins, screws. ball-bearing(KME etc.) etc.

We'll visit one of these factories, converted into a paediatric convalescence hospital.

Now, after we leave the A11 highway and turn around Pistoia on the peripheral ring, we start travelling on Strada Regionale SR66. Yes, we're on road 66...where we'll get our kicks, of course...

Kick 1 – Coppice products terminal

Old "ice fields" emerge as regularly-shaped flat areas, with a surface between 0.5 and 2 hectares. Once they lost their original function, they were abandoned. Today they offer ideal settings for log landings and terminals.

We'll visit one of these fields converted into a wood terminal. Many different products types are stored at the terminal in separate piles: timber, large poles for natural engineering (slope consolidation), small poles and posts for fencing, vineyard props, firewood logs, chip wood. All these assortments are produced from coppice operations. Different species are used for different products(i.e. you do not produce firewood from chestnut, nor you turn beech into posts...)

Kick 2 – Biomass-fed heating plant

There are many examples of modern chip-fed heating plants in Tuscany, and generally in Italy. In Pistoia we are spoiled for choice. In a 10 km radius from the site of our visit we can pick at least four such stations, all built in the last 5 years. These are: the municipal swimming pool in Maresca, the school and Dynamo Camp in San Marcello, the city hall in San Mommè. In Campo Tizzoro, a larger chip-fed Combined Heat and Power plant is being built right now, in the industrial area obtained from the reconversion of the old SMI ammunition factory.

We shall visit the plant run by Dynamo Camp in San Marcello. Dynamo Camp is a paediatric convalescence hospital, run with the support of the Paul Newman foundation. Patient rehabilitation facilities include a 50x25 m swimming pool, which is kept at a relatively high temperature. Heat for the pool is generated by a small chip-fed boiler (200 kW Fröling Turbomat), which runs 300 days per year, with a daily consumption of about 2 m³ loose volume of chips.

Participants will check the layout and the characteristics of the plant. Important discussion will concern the tight quality specifications of the chips fed to small-scale plants, and the resulting benefit derived from single-operator management, where the same actor manages both fuel supply and plant operation. That prevents the unfortunate mismatch between fuel quality and plant specifications, which is the most common cause for the failure of such initiatives.

In this case, the management has established a solid contract with a trusted local logging company. In San Mommé – for instance - a consortium of local logging companies have been entrusted with managing the three plants through "energy

contracting”, so that they have the best interest in supplying the plants with the right fuel.



Kick 3 - Coppice harvesting

Modern coppice harvesting is well established in the Tuscan mountains. Small-scale logging companies have acquired appropriate mechanization, which boosts the efficiency of their operations. Tower yarders have been used in the area for almost 30 years and they are currently enjoying further expansion. Starting in 2012, the Region Government of Tuscany offers a 1200 €/ha subsidy for yarder extraction and the removal of slash (for fire prevention). That initiative perfectly matches the revival of cable yarding and the recent development of biomass production.

We'll visit a modern small-scale operation where coppice trees are felled motor manually with chainsaws, extracted whole with a small tower yarder and chipped with a small drum chipper, for producing high-quality chips. These are used for feeding small-scale chip-fed heating systems.

The operator manages an integrated business, where his company rents large tracts of forests from private owners, with the obligation of implementing the owners' approved forest management plans. The lease typically last 10 years, and can be renewed. The operator we'll visit has been renting some of the same forests for almost 30 years, and he is now cutting some of the same compartments for the second time. This type of agreement is beneficial for both: small owners can manage their forest in a simple way (by leasing their ownership rights), while small logging companies can finally plan their long-term investments in modern machinery.



Kick 4 – Non-wood products

In fact, we would be more accurate if we called this “lunch”...After a Route 66 that does not run coast-to-coast and a Rhein river holding no Nibelungen gold, finally we’ll get something genuine!

We shall gather in the local Casa del Popolo (people’s house – a communal hall normally managed as a bar and restaurant) to eat a simple buffet meal, mostly based on coppice non-wood products. You’ll be served traditional chestnut flour pancakes (necci), polenta, local pecorino cheese, castagnaccio chestnut cake and other local delicacy. For the sake of the poor mountain tradition and to the relief of vegetarians, this meal will contain no meat (no pork or any other types). Gluten-intolerant people will only need to stay away from the local unsalted bread, since neither polenta nor chestnut contain any gluten. That simple...

Kick 5 – Firewood processing yard

No coppice activity can ignore the crucial importance of firewood. That is the main product obtained from traditional coppice forests in Italy, and in the rest of the world.

Most logging companies in the area manage a firewood processing yard, where firewood logs are crosscut and split into stove wood. There are at least a dozens of Italian manufactures who produce quality firewood processors, specifically designed for difficult (i.e. small, crooked and hard) Mediterranean wood.

Value recovery is a crucial component of firewood processing. Cost-effective operators separate different sorts for different users: bakeries and pizzerias, stoves and fireplaces all require different sorts and pay different prices.



Kick 6 – Post processing yard

Just few kilometres ahead we have located a post processing yard, where post-size logs are processed into the final product, i.e. sharp-pointed, peeled posts, stakes and poles.

Again, sorting is crucial to value recovery. Posts and stakes are sold by the number, not by the weight. A truck-and-trailer load of posts and fencing assortments can be worth as much as 10,000 €, if it's the right material. Successful operators maximize productivity, as well as value recovery.

Tired from the day and the wine, we'll then drive back to Florence with expected arrival at 17:00

Raffaele Spinelli, Natascia Magagnotti, Janine Schweier

Monday, Feb. 24th

Time table

Location	Arrive	Leave
Firenze		08:00
Kick 1	09:15	09:45
Kick 2	10:00	11:00
Kick 3	11:45	12:30
Kick 4	12:45	14:00
Kick 5	14:15	14:45
Kick 6	15:00	15:30
Firenze	17:00	

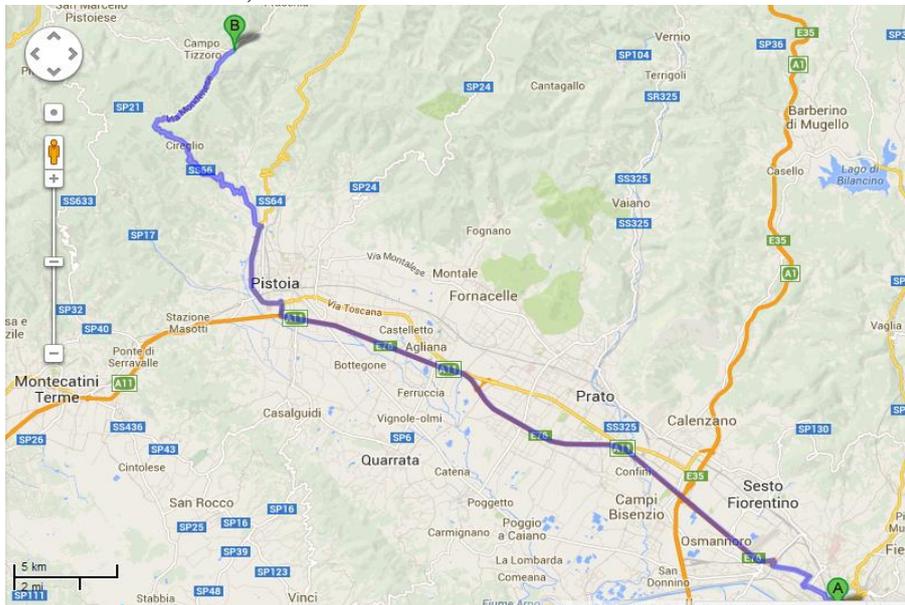
Departures and arrival: Piazza Adua, Firenze



For further information: spinelli@ivalsa.cnr.it

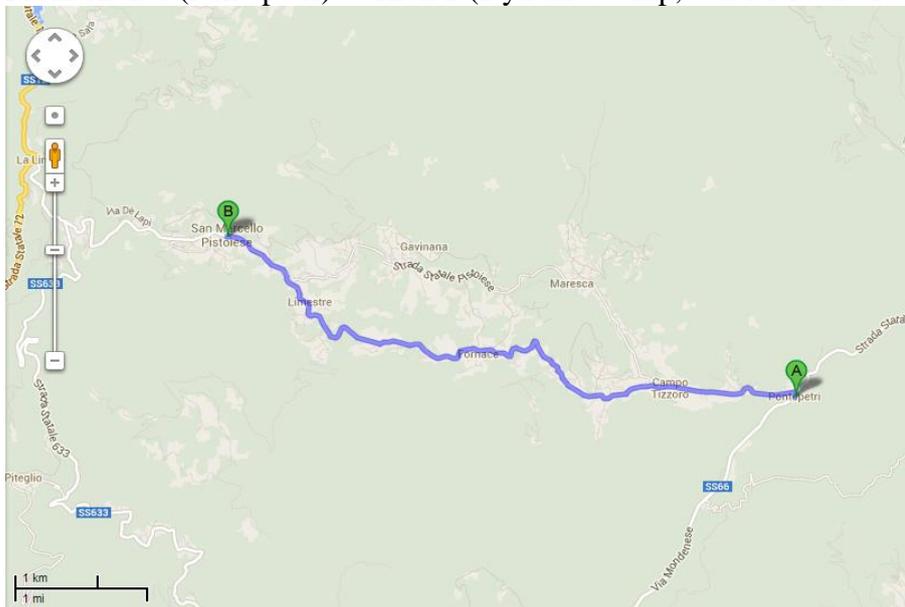
For the geographically-minded

From Piazza Adua, Florence to Kick 1



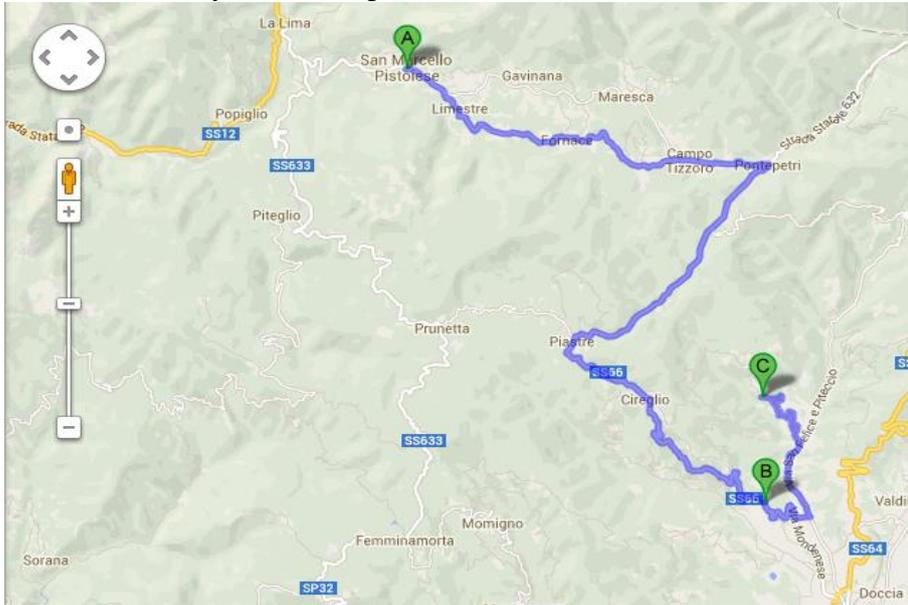
57 km – 1h15min

From Kick 1 (Pontepetri) to Kick 2 (Dynamo Camp, San Marcello P.se)



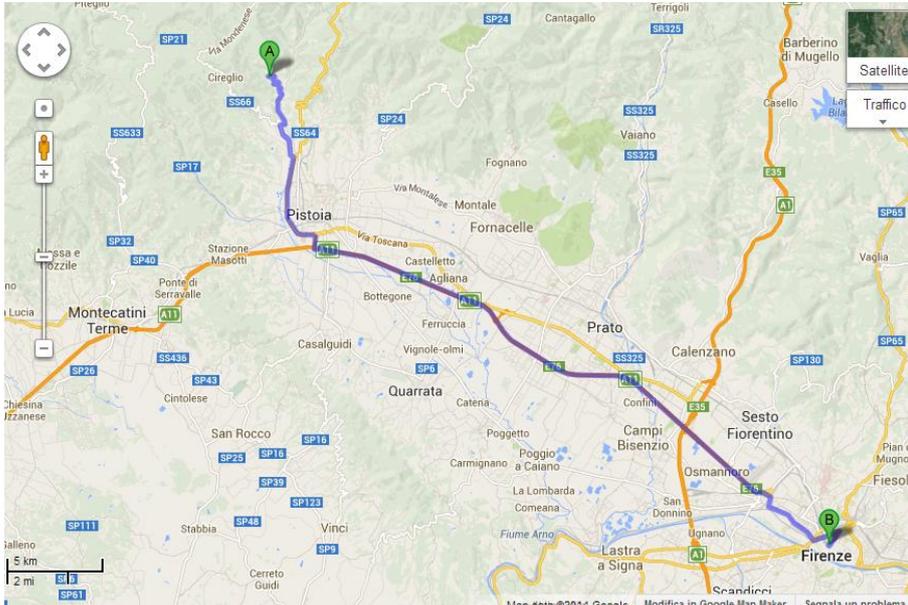
9 km – 15 min

From Kick 2 (Dynamo Camp, San Marcello P.se) to Kicks 3-6 (Saturnana)



30 km – 50 min

From Kick 6 (Saturnana) to Piazza Adua, Florence



47 km – 1 h (we'll probably be asleep anyway...)