



PRo Silva EXEMPLARY FORESTS

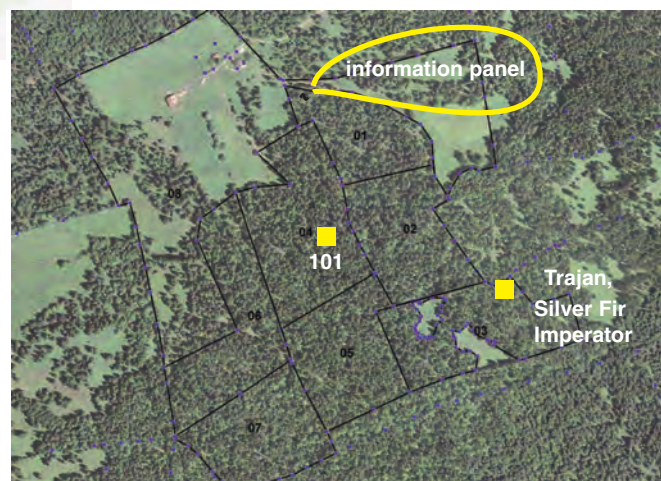
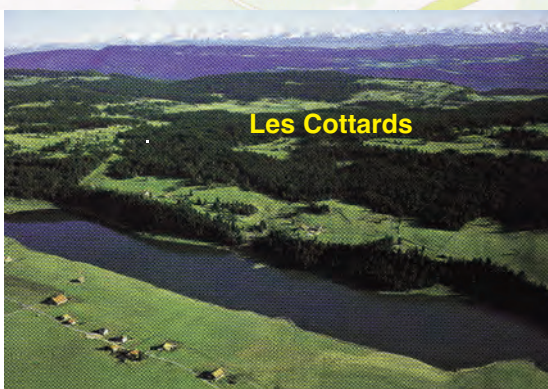
Objectname : **LES COTTARDS**, Private Forest, Swiss Jura Mountain

Main Character (Exemplarity) : The management aim for the existing spruce-fir selection forest is to optimise the net revenue within the limits given by close to nature management principles. Since the profitability of the forest depends on the wood market, the quality and quantity of the provided wood and operating costs, foresters expect that the market for high quality timber will prevail and bring the highest revenue on the long run. The owner on the other hand can influence both the quantity and the quality of wood production and has chosen two strategies to improve profitability :

- In the short term, using the selection treatment and the Control Method : to produce 1 to 2% of class A timber, 85% class B and industrial and fuel wood for remains ;
- In the long term, in addition to regular silvicultural treatment : “restructuring the wood factory” for producing more than 60% class A and 25% class B timber.



The estate exists since 1727. It consist of a 38 ha selection forest with 8 compartments, expected to produce in 50 years (around year 2060) 200 m³/yr of class A timber, based on 1 400 large trees, pruned up to a height of 20 m (in average 50 certified candidates per hectare).



Forest owner family since : 1922

Location : 535 100/201 550, Jura Mountains, 2406 La Brévine
Canton of Neuchâtel, Switzerland, Elevation 1125 - 1185 m.

Contacts for the forest : wpleines@agriforest.ch
for hotel reservation : tourisme.neuchatelois@ne.ch

Forest area : 38 ha. Close to nature treatment since 1900.

Regeneration : 100% natural.

Phytosociology : Fagion and Vaccinio-piceion mosaic

Climate : Precipitations in La Brévine : 1633 mm/yr
Mean annual temperature : 4,8 °c

Species composition (in volume) :

- 62% Norway Spruce
- 31% Silver Fir
- 4% Beech
- 2% Sycamore
- 1% Other hardwoods

Standing volume (dbh above 17,5 cm)* :

- Growing stock : 342 m3/ha
- Large trees (dbh 55-100) : 45 %
- Medium trees (dbh 35-50) : 41%
- Small trees (dbh 20-30) : 14 %
- Ideal growing stock : 330 m3/ha
- * Sylve/m3 coefficient : 0,83

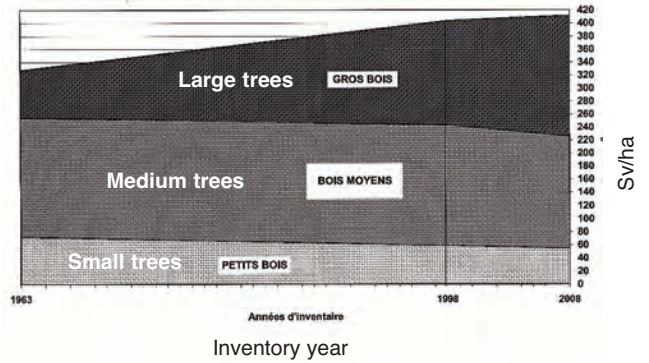
Results of the treatment : are aptly documented since 1963 successive full inventory (Control Method).
Economic results are available too.

- Current total volume increment period 1998-2007 : 7,9 m3/ha/yr.
- Prescribed cut (period 2008-2015) : 8,5 m3/ha/yr
- Past harvest (including 11% storm and bark beetles)-period 1998-2007 : 7,25 m3/ha/yr
- Thereof : Lumber : 86%
Industrial use : 12%
Fuel : 2%

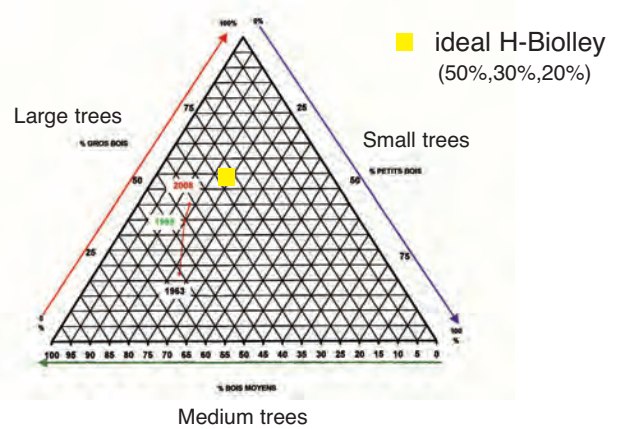
Labour productivity

- Labour for harvesting : 1,0 h/m3/yr
- Labour tending operations : 0,1 h/m3/yr
- Man-power intensity : 0

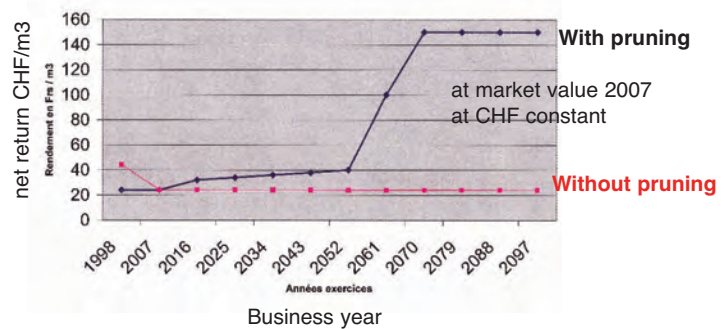
Treatment response after 50 years



Optimum volume structure



Net return prospects



ONE OBJECTIVE : TO ENSURE THE PRODUCTION OF HIGH QUALITY TIMBER IN LARGE QUANTITIES



One operator prunes safely one tree up to 20 m height in a record time of 15 minutes, thanks to the use of a powerful pruning tools.

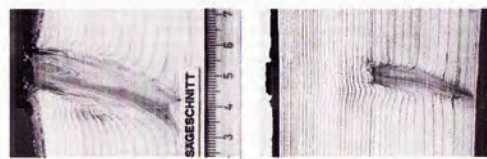


The Felco 810 is powered by a battery with a 1 day autonomy, held on the back of the operator. It can cut branches up 35 mm in diameter. The cut is clean, the fibres are not pulled out. The cut is carried out close to the stem, enabling quick tissue recovery.

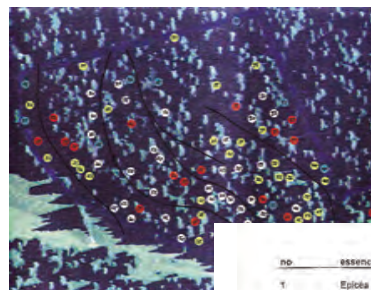


The first candidate, No 101 : Spruce, diam. 35 cm, pruned to 20 m high. The tree had been pruned naturally on part of the 20 m, as evidenced by its neighbours. Its crown represents a third of the height.

A “wood factory” that ensures a regular ring growth, as shown on the photo below :



Identification of candidates according to the diameter categories (15, 20, 25, 30, 35 cm) and pruning height (from 5 to 20 m) : a guarantee of traceability.



Liste des arbres élagués selon plan de situation (chevreuils)

no	essence	couleur	no	essence	couleur
1	Épicéa	orange	55	Épicéa	orange
2	Épicéa	bleu	56	Sapin	blanc
3	Épicéa	blanc	57	Sapin	blanc
4	Épicéa	blanc	58	Épicéa	blanc
5	Sapin	jaune	59	Épicéa	orange
6	Sapin	jaune	60	Épicéa	blanc
7	Aïstier	jaune	61	Épicéa	blanc
8	Épicéa	orange	62	Sapin	blanc
9	Épicéa	blanc	63	Épicéa	jaune
10	Épicéa	jaune	64	Sapin	blanc
11	Aïstier	jaune	65	Sapin	bleu
12	Sapin	blanc	66	Sapin	blanc
13	Sapin	jaune	67	Épicéa	orange
14	Sapin	blanc	68	Sapin	blanc
15	Sapin	jaune	69	Épicéa	bleu
16	Sapin	orange	70	Sapin	bleu
17	Sapin	blanc	71	Sapin	blanc
18	Épicéa	blanc	72	Épicéa	blanc
19	Épicéa	blanc	73	Sapin	jaune
20	Épicéa	jaune	74	Sapin	blanc
21	Épicéa	orange	75	Sapin	orange
22	Épicéa	blanc	76	Épicéa	jaune
23	Épicéa	bleu	77	Épicéa	jaune
24	Sapin	jaune	78	Sapin	orange
25	Aïstier	jaune	79	Érablé	orange
26	Sapin	jaune	80	Sapin	blanc
27	Sapin	jaune	81	Sapin	blanc

Certification, conducted by the forest office, which states in time and space the quality of performed work.

With already 1 100 candidates pruned since 1998, the forest is a growing treasure (on average nearly 10 sv for Spruce, 14 sv for Silver Fir and 1,5 sv for Sycamore). The lead time (ie. the time necessary to grow from one diameter category of 5 cm to the next) for some Spruces is 6 years and only 4 years for some Silver Firs.