Scots pine

Pinus sylvestris L.* | *F: Pin sylvestre* | *I: Pino silvestre* | *R: Tieu da guaud* | *E: Scots pine

General

Scots pine is a widespread, light-demanding pioneer species. In Switzerland it occurs from low elevations up to the subalpine zone and is particularly competitive on dry, shallow or otherwise extreme sites. It accounts for around 2.3 % of the stems in Swiss forests.

Flowering

Scots pine is monoecious, bearing male and female flowers on the same tree. Flowering takes place mainly in April and May. The male flowers are usually clustered at the base of young shoots and release large quantities of yellow pollen. The small female inflorescences are found mainly in the upper crown and are initially reddish to purple. Unlike spruce or larch, Scots pine cones need more than one growing season to reach seed maturity. After pollination, small cones first develop and overwinter. Only in the following year do they grow substantially and form the seeds.

Fruits

The ovoid to conical cones are green during development and turn greyish brown as they ripen. The seeds of the current crop ripen in the autumn of the second year of development. The brown cones then open and release the winged seeds, which are dispersed by the wind. Empty cones can remain on the tree for a long time. Green cones of the current seed crop and older, greyish-brown cones may therefore be present at the same time.

Masting behaviour

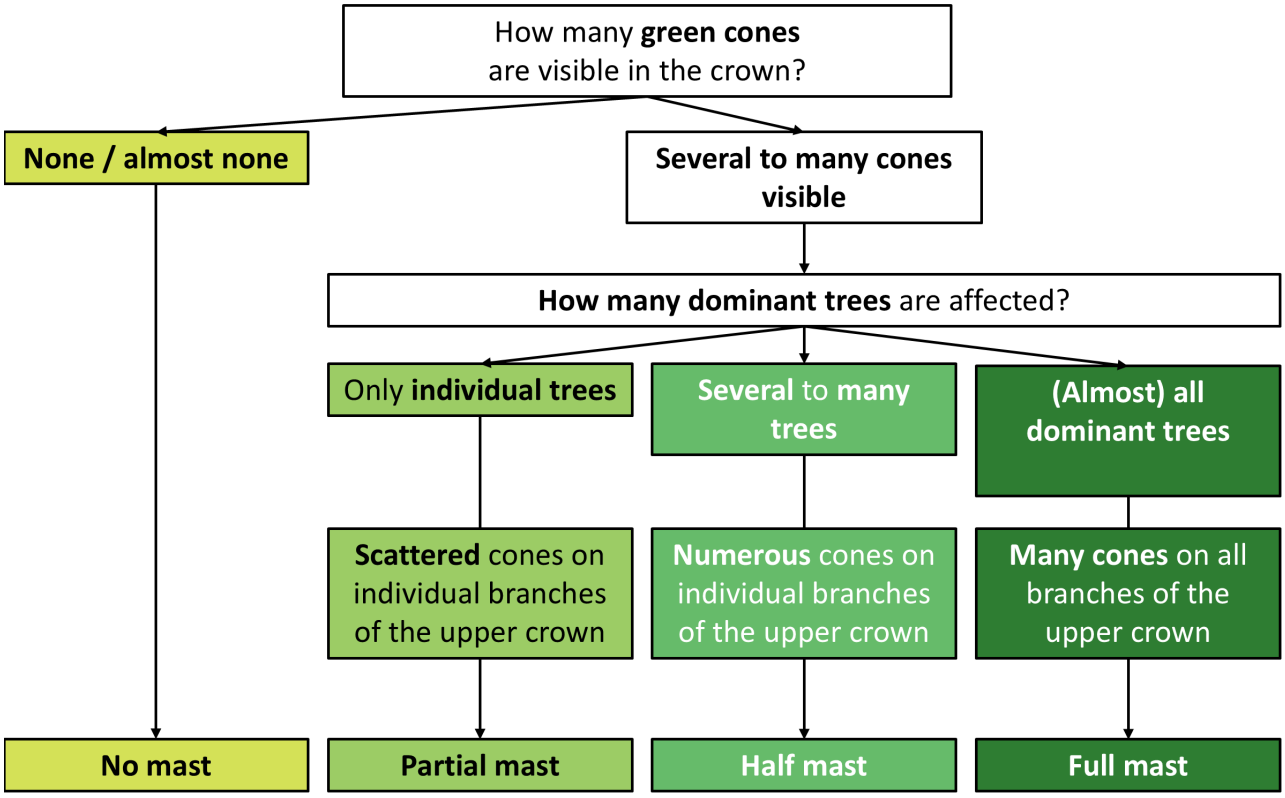
Seed production in Scots pine varies considerably from year to year. Good cone years recur regularly at intervals of a few years. Cone initiation and development are influenced by the weather during several developmental phases.

Mast assessment

Timing: July to early September.

The assessment covers the green cones of the current seed crop, which ripen in the coming autumn. In midsummer they can still be easily distinguished from the greyish-brown cones of previous years. Young cones may also appear glossy and sometimes bear drops of resin. Later in autumn the distinction becomes more difficult, as the current year's cones also turn brown. The cones are often located in the well-lit part of the crown and can be hard to spot from a distance. Good light and visibility conditions and good binoculars are therefore particularly important for a reliable survey.

Assessing the fruit load: Seed masting is a stand-level phenomenon. Wherever possible, several dominant, reproductively mature trees in a stand are assessed. The mast class describes the stand as a whole, not individual trees with particularly heavy or light fruiting. If the fruit load is uneven, choose the class that best characterises the stand as a whole. The intensity of Scots pine mast can be estimated using the following key:


How many **green cones** are visible in the crown?
None / almost none
Several to many cones visible
How many dominant trees are affected?
Only **individual trees**
Several to **many trees**
(Almost) all dominant trees
Scattered cones on individual branches of the upper crown
Numerous cones on individual branches of the upper crown
Many cones on all branches of the upper crown
No mast
Partial mast
Half mast
Full mast