Table 3. Detailed description of the source material used for the construction of the cDNA libraries

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Cambial zone (A + B). *Populus tremula* × *tremuloides* T89. Bark was peeled and tissue scraped from both exposed surfaces with a scalpel. Sample includes developing xylem, cambial zone, and mature phloem.

Active cambium (UB). *Populus tremula*. Stem samples were collected from three different trees growing south of Umeå on July 10, 2001. Sections obtained by cryosectioning were used for RNA preparation.

Dormant cambium (UA). *Populus tremula.* Stem samples were collected from three different trees growing south of Umeå on October 5, 2001. Sections (30-μm) obtained by cryosectioning were used for RNA preparation.

Tension wood (G). *Populus tremula* × *tremuloides* T89. Wood scrapings of a tree inclined for 3 weeks in the greenhouse. Tissues should mainly contain wood cells that are actively forming secondary cell wall and a G layer.

Wood cell death (X). *Populus tremula* × *tremuloides* T89. Sample was taken from stem and included xylem cells that started secondary cell-wall formation but mainly those where the cell wall was fully developed. The sample also included cells that had died.

Young leaves (C). *Populus tremula* × *tremuloides* T89. Library described in ref.1. Trees were cultured in a greenhouse in fertilized peat under natural light supplemented with metal l halogen lamps at a photosynthetic photon flux density of 150 microeinsteins (μE). Photoperiod ,18 h; 20/15°C. They were watered daily and fertilized once a week. Young, but fully expanded leaves were used.

Senescing leaves (I). *Populus tremula*, Library described in ref. 2. Leaves (excluding midribs) were collected from one wild tree on the Umeå University campus. Sampled Sept. 14, 1999 (a few days before visible leaf senescence was observed) at 11:00 am.

Cold stressed leaves (L). *Populus tremula* × *tremuloides* T89. Greenhouse plants were transferred to 5°C. Fully developed leaves were sampled 3 and 4 days after transfer and pooled.

Dormant buds (Q). *Populus tremula*. The same tree as in the senescing leaves library. Dormant buds were collected in February.

Petioles (P). *Populus tremula*. Petioles collected from several individuals, growing in long-day conditions and stressed in different ways, were pooled. Stress treatments were (*i*) Mechanical stress: A tree was hit every second for 20 h, resulting in trembling of the whole tree. (*ii*) Nutrient stress: A tree was planted in perlite and grown without nutrients for 2 weeks. (*iii*) Biotic stress: A tree was infested with spider mites. (*iv*) Cold stress: A

tree was exposed to 5°C (under short-day conditions) and sampled after 5, 10, 20, and 37 days.

Virus/fungus-infected leaves (Y). *Populus tremula*. Leaves from different stages infected either with: (*i*) Poplar Mosaic Virus or (*ii*) *Venturia tremulae*, were sampled and pooled. Healthy noninfected leaves were sampled and used as a driver pool in a partial subtraction step of the cDNA synthesis. Sequences Y001–Y004 are from the virus-infected and Y005–Y024 are from the fungal-infected partial subtractive library.

Flower buds (F). *Populus trichocarpa.* Library described in ref. 3. Immature female inflorescence tissue was collected in mid to late May from wild trees growing in the vicinity of Corvallis, OR. Reproductive buds were dissected to remove the young bud scales and the entire inflorescence tissues were collected.

Female catkins (M). *Populus trichocarpa*. Flushing catkins were collected in early spring (around March 1) from wild trees growing in the vicinity of Corvallis, OR.

Male catkins (V). *Populus trichocarpa.* Flushing catkins were collected in early spring (around March 1) from wild trees growing in the vicinity of Corvallis, Oregon

Apical shoot (K). *Populus tremula* × *tremuloides* T89. Apical shoots (150) (top 3 mm, biggest leaf ≈5 mm, weight ≈4 mg) from 3-month-old greenhouse-grown plants were collected and pooled.

Shoot meristem (T). *Populus tremula* × *tremuloides* T89. Apical meristems (300) were dissected out. The collected tissue represented aproximately100 μm × 100 μm of the central zone of the meristem. The sampled tissue contained approximately five cell layers and contained no visible leaf primordia.

Bark (N). *Populus tremula* × *tremuloides* T89. Long-day-treated plants (≈3 m). Bark was sampled from under the "crown" and 75 cm downward. The sample was peeled off with a "potato peeler," buds were avoided, and the cells were inspected in the microscope.

Roots (R). *Populus tremula* × *tremuloides* T89. Plants grown in agar under sterile conditions. The whole root system (primary roots that were white) up to 0.5–1 cm from the stem was used.

Imbibed seeds (S). *Populus tremula*. Seeds from a seed lot were imbibed and samples were taken (*i*) right after imbibition and (*ii*) after 24 h and pooled.

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