The two common fir trees at Lake level in the Tahoe Basin are white fir and red fir. White fir is more common at Lake level, while red fir is more common at slightly higher elevations. Both grow naturally in the urban zone around Lake Tahoe. (Douglas-fir, a common tree on the west slope of the Sierra, doesn’t occur naturally in the Tahoe Basin, though some people have planted Douglas-firs in their yards.)

A common misconception in the Basin is that white fir is non-native... that’s not true! White fir is a naturally occurring species in the Sierra Nevada mixed conifer forest. What has changed is the QUANTITY of white fir in the forest. White fir and red fir are shade-tolerant species, meaning they can establish and prosper in shady conditions that exist in the forest understory. This gives them an advantage over pine trees, which prefer sunny conditions and disturbed ground (such as bare mineral soil that exists after a fire) in order to establish. With the suppression of fires over the last century, our forests have become denser, shadier, and a perfect breeding ground for fir trees.

White fir is not a “bad” species. Healthy trees are always better to retain than unhealthy ones, no matter the species. A healthy, robust fir tree is better to have in a yard than a pine with physical defect or poor health. Plus, maintaining species variety on a property is good; since most diseases and insects are species-specific, a disease that might infect all pines in an area won’t affect firs. A good long-term planning strategy for a property is to retain the healthiest trees of a variety of species.

**WHITE FIR** (*Abies concolor*)

- Have longer needles than red firs.
- Have needles that are more yellowish-green in color than red firs.
- Get their name from their bark color: gray on the outside and tan on the inside.
- Have needles that are difficult to roll between thumb and first finger.
- Have cones that break apart at the top of the tree, so are rarely found on the ground.

**RED FIR** (*Abies magnifica*)

- Have shorter needles than white firs, and needles look “tight” on the branch.
- Have needles that are more bluish-green in color than white firs.
- Get their name from their bark color: inside, a deep reddish-purple; outer bark is smooth and silvery on small trees, and chunky and dark reddish-brown on large trees.
- Have needles that roll easily between thumb and first finger.
- Have cones that break apart at the top of the tree, so are rarely found on the ground.
JEFFREY PINE  (*Pinus jeffreyi*)

- Jeffrey pines are the most common pine tree in the Tahoe Basin. They are found in all communities around the Lake, and are especially prevalent on the east shore where many stands of pure Jeffrey pine exist.
- Jeffrey pines can live for 400-500 years, and are more resistant to rot and decay than fir trees. Needles are regenerated every few years, when they turn brown and fall off the tree. While everyone is used to pine needles on the ground in Tahoe, sometimes people think it’s a bad sign to see brown needles on a tree; however, those brown needles are often just part of the regeneration cycle, but haven’t fallen off yet.
- Jeffrey pines are well-adapted to fire in the landscape. The bark is thick and fairly resistant to fire. Jeffrey pines “self-prune,” meaning their lower limbs naturally die and fall off when trees are near each other. This strategy keeps the needles and twigs (the more flammable parts of the tree) well away from the ground, and therefore less likely to catch on fire, as long as there aren’t any ladder fuels nearby. Jeffrey pine forests are fairly fire-resistant even when the limbs of trees touch each other, as long as there aren’t ladder fuels beneath the trees and all dead limbs near the ground have been removed.

Jeffrey pines have:
- 3 needles in a fascicle (bundle).
- Longer needles than any other pine in the Basin (7-11” long).
- Purplish-brown bark that smells like vanilla and can be deeply furrowed.
- Cones that are tapered at the top, giving them an oval shape.

LODGEPOLE PINE  (*Pinus contorta var. murrayana*)

- Lodgepole pines are common in residential areas in the Tahoe Basin, especially near meadows, creeks, and areas with high groundwater. Lodgepole pines are native to the Tahoe Basin, though they’re becoming more prominent as they’re allowed to spread to new areas where they didn’t historically exist. Over the past century, aggressive fire suppression has allowed lodgepole seedlings to establish in meadows and openings that would normally burn often enough to prevent seedling establishment. Lodgepole pines extract huge amounts of water from the ground, which can result in areas eventually being converted from meadow to forest. Meadow restoration projects often consist of removing lodgepole pines and other conifers from areas that were historically treeless.
- Lodgepole pines are typically shorter and have smaller diameters than Jeffrey and sugar pines. They often have multiple forked crowns due to genetic defects, which can be hazardous in urban areas in addition to the more brittle nature of lodgepole pine stems than other conifer trees. When dense areas of lodgepole pines exist, thinning trees out heavily can be dangerous, since that exposes remaining stems to new wind patterns.

Lodgepole pines have:
- 2 short needles in a fascicle (bundle).
- Thin bark that is not deeply furrowed.
- Cones that are small and round.
INCENSE CEDAR *(Calocedrus decurrens)*

- Incense cedars are long-lived, stately trees. Relative to other conifers in the Tahoe Basin, they’re extremely resistant to rot, disease, insects, and ground fires. These capabilities allow incense cedars to persist through disease outbreaks, fires, and droughts. Even when large, old specimens don’t have a high percentage of live crown (live branches), they can often live for many years and remain perfectly healthy.
- Incense cedars are less common than Jeffrey pines and white firs in the Tahoe Basin, and are desirable to retain in all areas. As long as their branches can be limbed away from structures, large trees are not typically considered a fire hazard. Thickets of small-diameter incense cedars are sometimes present in yards; those thickets should be thinned out to reduce fire hazard and promote the health of the remaining trees.

**Incense cedars:**
- Have flat sprays of needles that look more bushy and fern-like than pines and firs.
- Have thick, stringy reddish-brown bark.
- Have small cones at the ends of branches that start yellow-green and then turn brown. Incense cedars with thousands of buds in the spring can sometimes look diseased, when actually the tree could be very healthy.

SUGAR PINE *(Pinus lambertiana)*

- Sugar pines are scattered throughout the Lake Tahoe Basin. Due to their limited occurrence, it’s preferable to retain healthy sugar pines and remove other more common trees (such as Jeffrey pines, lodgepole pines and white firs) for defensible space, fuel reduction, and forest health thinning projects.
- Although sugar pines are typically only a moderate component of the Sierra Nevada mixed conifer forest, their numbers are declining even more due to white pine blister rust. A small percentage of sugar pines are genetically resistant to the disease, so seed collection and seedling planting programs are under way to preserve the existence of sugar pines. Evidence of a small amount of blister rust in a mature sugar pine is not typically a reason to remove the tree immediately, though tree retention decisions should always be made on a site-specific basis.

**Sugar pines:**
- Have 5 needles in a fascicle (bundle).
- Have shorter needles than Jeffrey pines.
- Have longer cones than any other conifer species.
- Can be identified by large cones at the ends of branches and long “arm-like” branches on mature trees.
QUAKING ASPEN (Populus tremuloides)

- Aspens grow in clumps in areas with high soil moisture. They are commonly planted in yards, and need to be irrigated if the soil does not naturally contain high amounts of water.
- Aspen root systems are completely interconnected and new trees typically sprout from the roots rather than seeds. Aspens are technically the largest living organism in the world because each grove with interconnected roots is considered one living system.

Aspens:
- Have leaves that appear to “quake” in the wind.
- Have smooth white bark.
- Lose their leaves in the winter.

BLACK COTTONWOOD (Populus balsamifera ssp. trichocarpa)

- Cottonwoods are native to the Lake Tahoe Basin. They exist in areas with high soil moisture, such as in meadows and near creeks. They are commonly planted in yards.

Cottonwoods:
- Are tall and thin with upward-pointing limbs.
- Have leaves with serrated edges and pointed tips.
- Have deeply furrowed gray bark.
- Lose their leaves in the winter.
**SPRUCE** *(Picea)*

- Spruce trees are not native to the Tahoe Basin. They are often planted in yards, especially in landscaped areas such as the Tahoe Keys and Condominium complexes. Spruces are well adapted to the climate, are non-invasive, and don’t cause problems for any native species. When planted in appropriate locations, spruces can be desirable landscape trees.

  Spruces have:
  
  - Needles on tiny wooden pegs that come out from all sides of the branch.
  - Cones at the top of the tree that stay intact when they fall to the ground.
  - Branches that look rigid rather than droopy.

**GIANT SEQUOIA** *(Sequoiadendron giganteum)*

- Giant sequoias, also called Sierra redwoods, are not native to the Tahoe Basin, although they typically do well as planted landscape trees. As suggested by their name, their trunks can grow to extremely large diameters, which is often overlooked when planting locations are selected. Giant sequoias are dense and bushy, making them good screen trees when planted in appropriate locations away from structures.

- During winter and spring, young giant sequoias can turn brown and appear to be partially or completely dead. This is common in the Tahoe Basin, but does not happen every year. It does not indicate a decline in health, but is instead a pigment that is already present showing up more prominently. The tree will typically return to its normal green color when temperatures rise, especially if the tree has an adequate supply of water. When young giant sequoias suddenly turn brown, it’s a good idea to wait and see if they recover before assuming they’re dead.

  Giant sequoias have:
  
  - Branching needles with little spines facing the tips.
  - Tiny cones that are rarely noticed on the ground.
  - Reddish-brown stringy bark.
  - A formal conical shape.