

# Forest Resources

Information compiled by the Forest Foundation

**Sources** – Approximately one-third of California’s 100 million acres is forests. Over half of California’s Forestland is under public ownership by the federal or state government. Approximately 11 percent of California’s forestland is privately owned and managed for timber production. California is home to 52 native species of conifer trees. Conifer trees produce cones, have leaves that are needle-like and are evergreen. Needles are like solar panels for the tree, capturing energy from the sun through photosynthesis and converting carbon dioxide and water into sugars used for growth and reproduction. The roots absorb water and nutrients from the soil, transporting them through the trunk to the rest of the tree. The trunk protects the tree and provides support. In spring, a tree grows wood in a ring of large, light cells. In summer, it grows more slowly, forming a ring of darker, smaller cells. Dark rings are counted to tell the age of the tree.

Coastal redwood, Douglas-fir, white fir, sugar pine, ponderosa pine and incense-cedar form the mainstay of California’s forest products industry. California utilizes the equivalent of one 100 foot tall tree per person per year in forest products. Trees are a renewable resource. In addition to natural regeneration, foresters replant an average of 30 million seedlings annually—about one for each person in the state.

**Uses** – California’s forests provide more than just forest products. They provide beauty, sources of recreation and are home to many Californians and to nearly 650 species of fish and wildlife. Forests protect against erosion, purify the air through photosynthesis and filter water. Nearly 100 percent of each tree is used to produce more than 5,000 products. Lumber, furniture and paper are easily identified wood products. Other items are less obvious. Rayon is cellulose acetate, a by-product of tree fibers. Lignin, which holds tree cells together, is often used as a thickener in baby foods, pet foods and cosmetics. Baked goods sometimes contain torula yeast, derived from sugars in wood pulp. Flavorings and fragrances from tree oils are often used in foods, beverages, cosmetics and medicines. Wood is 50 percent carbon. When trees are made into wood products, the carbon is stored for the life of the product. Wood waste from the milling process

is often used to produce electricity. This provides a renewable source of power, which is an environmentally friendly alternative to burning fossil fuels.

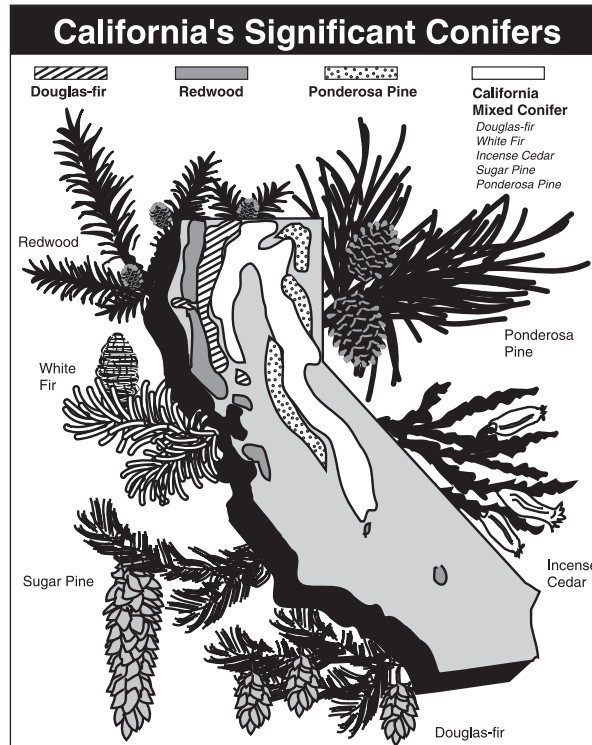
**History** – Long before the arrival of Europeans, Native Americans lived in and around forests. They burned and opened up parts of the forest to provide wood for daily needs, build villages, plant crops, make hunting easier and to protect against enemies. The process helped maintain forest health. Arriving in the 1600s, European settlers respected the forests which gave them building materials and plenty of game. In colonial days, towns often had a liberty tree, under which important decisions were made. A tree was stamped on America’s first coins and trees were sewn on the flags of the first colonies. During the settlement of the West in the mid-1800s, wood was used without much thought of the future. The Gold Rush town of San Francisco was built almost entirely of redwood—even its curbs.

Today, California foresters practice sustainable forestry—more trees are grown than harvested. The amount of U.S. forestland has increased in the last 20 years.

**Economic Value** – California has more forestland than any state, except Alaska. Our state is among the top five producers of wood products in the nation. California’s lumber, wood products, paper and allied industries provide an annual payroll of more than \$4 billion to employees annually. Approximately three percent of California’s lumber is exported outside the U.S.

**For additional information:**

The Forest Foundation  
 (866) 241-TREE  
 Fax: (530) 823-1850  
 Email: [se@calforestfoundation.org](mailto:se@calforestfoundation.org)  
 Website: [www.calforestfoundation.org](http://www.calforestfoundation.org)



# Forest Resources Activity Sheet



#1

Seedlings are often damaged or destroyed by animals, insects, drought, and plant competition. Modern forestry techniques allow 80 percent of seedlings to reach cone-bearing age.



#2

Saplings grow vigorously, cleaning the air of greenhouse gases and releasing oxygen.



#3

Light filtering through adolescent forests stimulates growth of understory plants, providing ideal foraging for animals, who then become prey to others.



#4

In established forests, foresters control disease and insects. They build trails and roads to provide access to firefighters.



#5

The mature forest provides recreation, watershed for urban and rural communities, animal habitats, and a host of wood products for our everyday lives.

## Lesson Ideas

- List the variety of products in your kitchen that come from trees.
- Visit a lumber mill or a paper processing plant.
- Help plan and cook a breakfast; list the ingredients you used that come from trees.
- Make a collage of everyday items made from trees that do not look like wood.
- Make a trail mix made from tree products. Include fruits, nuts, and sweeteners.
- Make a sand table forest scene. Show how Native Americans made openings in the forest through fire and harvesting to provide for their needs.
- Contact a forester to find out the kinds of tools used to measure and work with trees.
- Visit a cogeneration plant to find out how electrical energy is produced from forest by-products.
- Find the height of a tree at your school using a clinometer and triangulation, a method of geometry.
- Count the dark rings of a wafer of wood to determine its age.

## Fantastic Facts

1. Approximately how much of California is covered in forests?
2. Where does California rank in United States production of lumber?
3. How much of California's lumber is exported outside the United States?
4. Name a fabric made from tree fibers.
5. List one reason Native Americans used controlled burns in the forest.
6. How many species of fish and wildlife inhabit California's forests?
7. About how many forest products come from trees?
8. Name three of the six main types of conifers used for California wood products.

- 1) One-third 2) Ranked among the top 5 producers 3) Three percent 4) Rayon 5) Building villages, planting crops, hunting, or protecting themselves from attack 6) Approximately 650 7) 5,000 8) Coastal redwood, Douglas-fir, white fir, sugar pine, ponderosa pine or incense cedar

## Lesson Plan: Making Recycled Paper

**Introduction:** The word paper comes from the Latin word "papyrus," named after the Egyptian reed from which paper was first made. In this activity, students will create recycled paper—a forest product.

**Materials:** Large square pan about three inches deep, large bowl, 3 cups of water, a large section of newspaper, rolling pin.

### Procedure:

1. Tear one or two pages of newspaper into small pieces of one inch or less.
2. Put the paper chips into a large bowl and add three cups water to it. Keep adding paper, tearing it and squeezing it, until the mixture looks like thick oatmeal.
3. With the pan turned upside down, place about 1 cup of the

blended pulp over the bottom of the pan. Spread it with your fingers evenly across the entire area.

4. Lay several sheets of newspaper over the pulp, then carefully turn the pan over. Remove the pan. Your pulp "square" is now sitting on the newspaper.
5. Close the newspaper over the pulp. Using the rolling pin, roll over the newspaper to blot out the extra water.
6. Uncover and let the new "paper" dry completely. When it is thoroughly dry, peel your new "recycled paper" away from the newspaper. It can now be cut to any size and used to make a variety of things.
7. Have students make a greeting card out of their recycled paper. They can draw designs or use glitter and glue to write a message.

