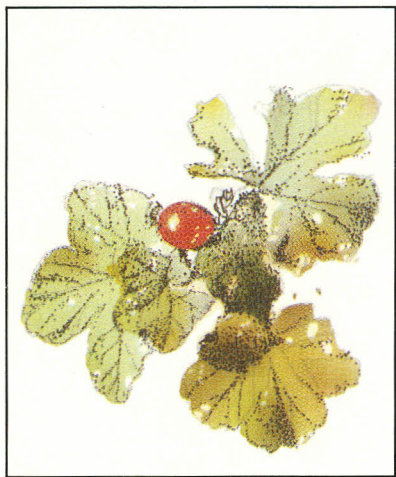


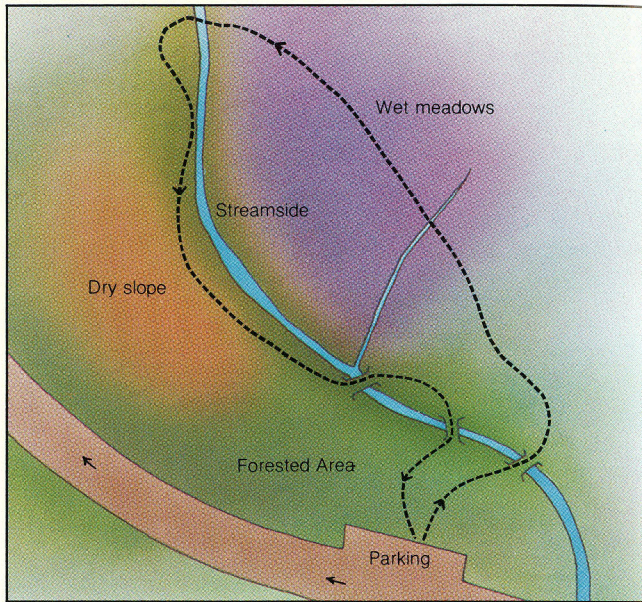
A TRAIL GUIDE  
TO  
CastleCrest



Price 50¢

A .4 mile (.6 km) loop through forest and meadow where  
many colorful wildflowers are identified.

Crater Lake National Park, Oregon



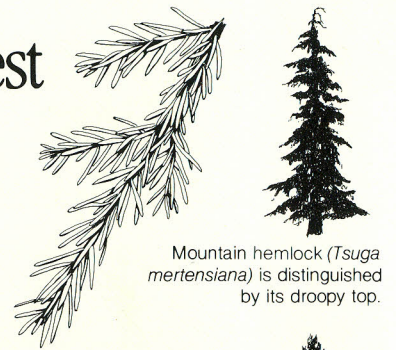
## 1: Forest Community

Forest dominates Crater Lake's landscape. At first glance, the forest appears as a homogeneous group of trees. In reality the forest is a complex association of many diverse organisms: trees, shrubs, flowers, birds, mammals, insects, fungi, and bacteria. Adapted to certain environmental conditions, these organisms grow together to form a plant community.

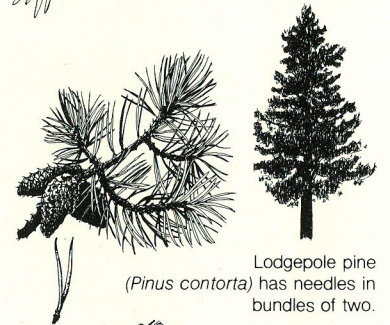
The Castle Crest Wildflower Trail circles one of many small meadows and openings found throughout this red fir — mountain hemlock forest community. Amid the dominant trees are conically shaped subalpine fir and short-needled lodgepole pine. Together these trees form a dense forest canopy through which little sunlight penetrates to the ground; here few wildflowers grow.

## 2: The Young Forest

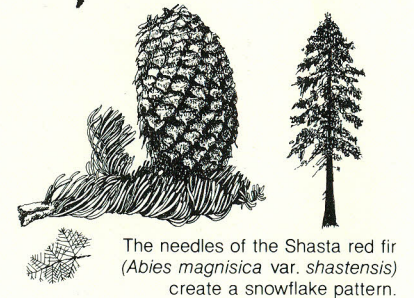
Forest communities are dynamic and evolving. Though they appear stable, it is incorrect to consider these associations as permanent. Why do these young trees form a conspicuous band through the forest? After a disturbance such as fire, insect infestation, or by man, the forest proceeds to heal the wound through regeneration. This ribbon of young trees grows on an old road bed. About 1940, new growth began when traffic on the road ceased. Other environmental factors of soil, sunlight, temperature, moisture, and topography allowed these plants to grow. The seeds that produced these trees came from nearby mature trees. The major species among the new trees is red fir. Look for example of the other three species already identified.



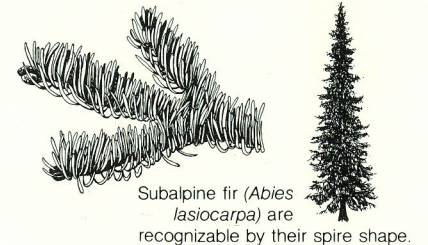
Mountain hemlock (*Tsuga mertensiana*) is distinguished by its droopy top.



Lodgepole pine (*Pinus contorta*) has needles in bundles of two.



The needles of the Shasta red fir (*Abies magnifica* var. *shastensis*) create a snowflake pattern.



Subalpine fir (*Abies lasiocarpa*) are recognizable by their spire shape.



### 3: Decay and Rebirth

When a tree dies it is immediately beset by forces of decay. A host of organisms (mites, ants, insect larvae, worms, etc.) live in and slowly digest the fallen tree. Wood-destroying fungi attack the lignin that holds wood cells together. Bacteria decompose the wood cells and help return their mineral content to the soil. This enriched soil benefits young hemlock sprouts which represent the next generation of mature forest trees. Forces of decay likewise prevent excessive build up of logs and litter on the forest floor.

### 4: Soil Forms

Soils are a mixture of mineral and organic matter built up through the processes of erosion, growth, and decay. Minerals in forest soil are derived mainly from fragmented rock, fallen from above, onto this talus slope. Forces exerted by water, freezing temperatures, and wind have cracked the rocks that glaciers once carried here.

These flowers, though they play a vital role in the design of the meadow, play an equally important role in the joy of those who find them. Please leave these plants for others to enjoy.



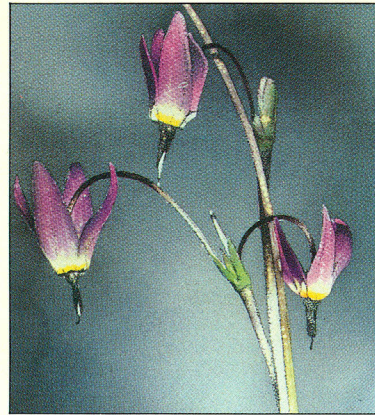
Gorman buttercup  
*Ranunculus gormanii*

Lichens, composed of two plants (alga and fungus), grow in cracks and on the surface of rocks. Acid byproducts of the lichens' life processes disintegrate the rock surface. Dust and windblown particles collect on the rough surfaces of the lichens. Over hundreds of years, a small patch of soil results and small herbaceous plants take root. In time, shrubs and trees succeed in closing the forest canopy.

Soil fertility is enhanced as the decomposing debris from plants and animals builds up an organic layer (humus) on the forest floor. The resulting soil type in part determines the composition of this forest plant community.

### 5: Meadow Community

In summer, a multitude of flowering plants, suited to moist soils and plenty of sunlight, flourish in the meadow. While lingering snowbanks melt, tiny violets and buttercups bloom, shooting stars unfurl pink darts, and bistorts display white florets. Verdant mosses claim the wet meadow center. Different



Shooting stars  
*Dodecatheon alpinum*



American bistort  
*Polygonum bistortoides*



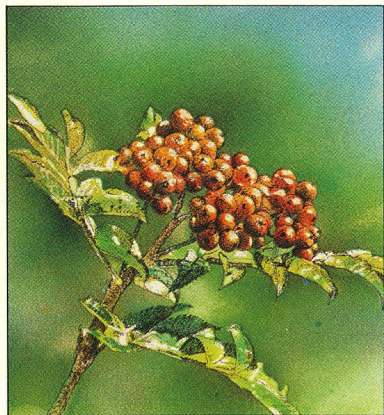
species come into bloom throughout the season to change the meadow's complexion.

In average winters, 50 feet of snow falls on Castle Crest's slopes. Seeds, roots, and runners of a host of plants lie dormant beneath the snowpack. As spring ar-

rives in June, new shoots push upward and willow branches sprout fresh leaves.

Through plant succession the meadow community is constantly changing as plants compete for sunlight and water. Willows encroach upon the meadow herbs. Red fir-mountain hemlock forest

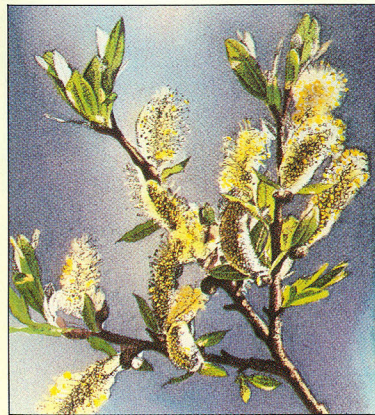
gradually replaces the willows. The forest can regenerate itself indefinitely under present climatic conditions. For now, Castle Crest Spring continues to bathe the roots of the pink monkeyflowers and other colorful mountain wildflowers.



Pacific red elder  
*Sambucus racemosa* var. *microbotry*



Scarlet paintbrush  
*Castilleja miniata*



Eastwood willow  
*Salix eastwoodiae*



Columbia monkshood  
*Aconitum columbianum*

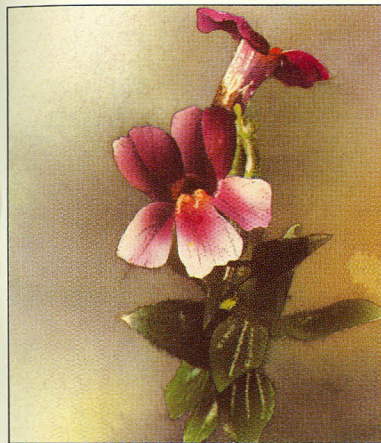




Pacific bleedingheart  
*Dicentra formosa*



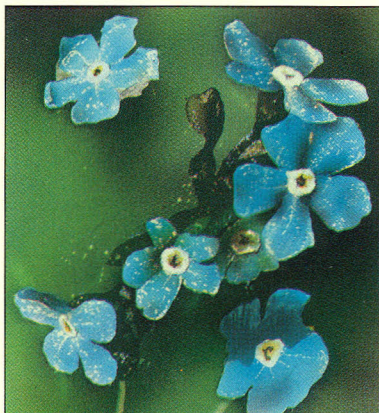
Arrowleaf groundsel  
*Senecio triangularis*



Lewis monkeyflower  
*Mimulus lewisii*



Mountain Violet  
*Viola purpurea*, var. *venosa*



Blue stickseed  
*Hackelia micrantha*



Common pearl-everlasting  
*Anaphalis margaritacea*



## 6: Dry Ground Community

Before Mt. Mazama collapsed, the final eruptions 6,840 years ago hurled a pumice and loose rock mantle onto the slopes of the old volcano. The veneer is thin here, but is several hundred feet deep at Godfrey Glen, only 3 miles downslope.

Disintegration of this porous material has produced the mineral component of local soils. In this parched opening, plants adapted to a sunny, well-drained site pioneer: grasses, spreading phlox, skyrocket gilia, sulfur eriogonum, rabbitbrush goldenweed, and umbellate pussypaws. Watch for rufous hummingbirds here when the gilia blooms.

Just as wet area succession proceeds toward the red fir-mountain hemlock forest climax, this dry area community will eventually be engulfed by the forest.

## 7: Creek Community

Water from Castle Crest Spring insures the creek's flow year round, providing for a stable aquatic community. Attached to rocks within the creek, an aquatic moss (*Hygrohypnum*) provides shelter and food for numerous small animals.

In contrast, the log in midstream harbors a temporary community. When this log rots, the mosses, sedges, and flowering plants growing on it will be washed away by the creek or overshadowed and perhaps displaced by shrubs and trees.

Water from Castle Spring pours into Munson Creek which rushes through Godfrey Glen to join Annie Creek. Probe the nature trails in these areas to discover more of the wild flavor of Crater Lake National Park.



## 8: Perspectives

The diversity of the forest community helps to guarantee its regeneration. Constantly changing are the colors, textures, forms, patterns, and processes of life in the forest openings. The red firs and mountain hemlocks will reproduce themselves as long as factors of climate, soil, and sunlight remain stable and no disaster sets back succession.

The National Park Service protects the natural systems that created and maintain this forest community so that our children may experience the joy of finding these beautiful floral displays. To the degree that we can learn to care for the forest and wild creatures within it, we will reinforce an inner belief that life itself has meaning, purpose, and direction.

Spreading phlox  
*Phlox diffusa*

Sulfur eriogonum  
*Eriogonum umbellatum*

Rabbitbrush goldenweed  
*Haplopappus bloomeri*



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