Repeated fires in redwood forests sometimes result in hollowed out trees known as "goosepens," which were used by early settlers to house poultry.
CAMPING

Developed Campgrounds
The three state parks within the boun-
dary of Redwood National Park offer
campgrounds which have sites with a
table, fireplace, food cupboard and
restrooms (most located at Gold Shuff
Beach, which has solar showers). No
bookings are available. Dispensal drop-
sites are located at Jedediah Smith
and Mill Creek campgrounds.
Overnight rates are $19.00 a night per
site and $3.00 for each additional vehicle.
Bicyclers and hikers may camp for $4.00
per person per night. Day use fee for pic-
sicking is $3.00 in the state parks.
If you have a dog, proof of rabies vac-
cination and a fee of $1.00 per night is re-
quired. There is a fee of $4.00 each for dogs
brought in by day use visitors. Dogs are re-
quired to be on a leash in campgrounds
and not allowed on trails.
During the busy summer months, reser-
vations can be made through STIXT up to
4 weeks in advance, or as late as 2 days
prior to arrival. Write to STIXT, P.O.
Box 4633, Santa Cruz, CA 95063-5706, or call
(800) 446-7275. A reservation fee of $13.50 is
charged. Your stay is limited to 30 days at
each campground from October to May
and 15 days during the summer.
Year-round camping is available:
Jedediah Smith Redwoods State Park —
5 miles northeast of Crescent City on U.S.
199. 109 units and picnic areas located on
the Smith River.
Prairie Creek Redwoods State Park — 5
miles north of Orick on U.S. 101, 75 sites
and picnic areas located on Hwy. 1.
Gold Shuff Beach — access via narrow,
dirt Davison Road south of Prairie Creek.
Weather sometimes makes area inac-
cessible. Oversized vehicles prohibited.
25 sites on beach and dunes.
Additional camping is available April-
October:
Mill Creek — 8 miles south of Crescent
City on U.S. 101 in Del Norte Coast
Redwoods State Park — 5 miles south of
downtown Eureka in easily
negotiated area on Mill Creek.
U.S. Forest Service
The seven Forest Service campgrounds
within the Gauleyher have a variety of
camping experiences. The camp-
grounds provide tables, food cupboards
and restrooms. Maximum stay is 14 days.
Campers are available on a first-come,
first-served basis.
Panther Flat — 2 miles east of Gauley
on U.S. 199. $8.00 camping fee.
Grassy Flat — 4 miles east of Gauley on
U.S. 199. $5.00 camping fee. Open summer
only.

Shelly Creek — 2 miles north on
Patrick Creek Road: no fee.
High Flat — 3 miles southeast of Gauley
on South Fork Road (access 7 miles west
of Gauley and 3 miles east of Hoouts),
$4.00 camping fee.
Horse Flat — 3 miles north of Big Flat;
do not camp.
Several unimproved campsite provide a
place for activities that are dispersed, in-
dividual, and sometimes solitary, such as
hunting, fishing, hiking and wilderness-
type camping. Maximum stay is 30 days;
fire permit required.
Bear Boxes — Munlatt Lake
Chimney Flat Sanger Lake
Dog Flat — Youngs Valley

Primitive Camping
Three primitive walk-in campites are
on Redwood National Park lands. North-
ernmost is the Nickell Creek campground,
located 5.5 miles from the end of Enderts
Beach Road, off U.S. Highway 101 just
south of Crescent City. There are five sites
with tables, fire rings, and composting
Toilet. No water is available. The second,
DeMalton, is on the section of the Coastal
Trail east of Highway 101 between Danaa-
Rose and Gold Shuff Beaches, 10-site primitive campground with tables,
bear boxes, and composting toilet. Potable
water must be carried. No open fires are per-
mited. Fest Lake primitive campground is
located above the coastal bluffs west of
Klamath. There are 10 sites there, with
potable water and composting toilets. In
addition to the established primitive camp-
grounds listed above, backcountry cam-
ing is also permitted on the Redwood Creek
Trail. Camping is allowed upstream from
the first creek junction (1.5 miles from the
trailhead), except for areas 1/4 mile on either	side of the Tall Trees Grove. Permits can be
obtained at the trailhead or at park Information
C entered. Dogs are not allowed at any of the back-
country sites, or along the Redwood Creek
Trail.
Prairie Creek Redwoods State Park also
offers walk-in campsites at Butler Creek:
Primitive Camp. There are several sites,
with pit toilets and water nearby. The
water must be treated before use. Permits
must be acquired through the State Park
Hostel — see page 10.

Portion A of Del Norte County
You can take a leisurely two-hour excurs-
ion through the redwoods and along the
seashore which is on the road guide. Redwood Scenic Tours, Inc., a state
licensed tour agency, operates the tours
for visitors who wish to leave their

WE NEED YOUR HELP!
Over the last few years the world's
tallest trees have been damaged from ex-
cessive handling by visitors. Its trunk has
been worn and scuffed around the base.

CANS YOUR TRASH
The National Park Service has begun an
antisniffastic campaign with the
enthusiastic support of Park Service Direc-
tor Stephen D. Brown, who emphasizes that
the $15 million spent picking up litter
below the branch, and 12-15 feet above
the branch. By keeping hands free, black
bear, park visitors can help to keep them
from developing a habit of raiding campites.

Quiet moments in a redwood grove will be long remembered.
The Redwoods are trees that endure time...

The coast redwood, whose scientific name is "Sequoia sempervirens," is the tallest kind of plant in the world. It is also the fastest growing conifer, or cone-bearing tree, in North America.

Coast redwoods are among the oldest living things on earth. The oldest known specimen was logged in 1933. A count of the growth rings (one is added each year) showed the tree to be 2,200 years old. However, most redwoods live to an average age of six centuries.

The tallest known redwood is about 367 feet by the National Geographic Society in 1963.

Estimate the height of a tree:

If there are 2 or more of you, have someone whose height is known stand by the tree to be measured. If you are alone tie a marker around the tree at a measured point (this is the "unit of measurement").

Hold a stick or pencil at arms length. Stand far enough away that you can sight over the top of the stick to the top of the "unit of measurement." on the tree trunk. Place your thumbnail on the stick where your line of sight meets the bottom of the "unit of measurement."

Move the stick upwards a unit at a time and multiply the number of times it takes to reach the top by the height of the "unit of measurement." This is the tree's height.

An alternate way to estimate the height of a tree is the Shadow-Ratio method. Place a stick of known length (yardstick) vertical to the ground and measure the length of its shadow. Measure the shadow cast by the tree (or any other object whose height you want to estimate).

Then: Shadow of Tree / Shadow of Stick = Tree's Height / Stick's Height

Example: 3 foot yardstick casts 2 foot shadow. Tree casts 20 foot shadow.

3 x 20 = 2 x Tree's height

30 feet is height of tree.

"Redwoods are the kings of their race." John Muir

1492 - Columbus discovers America

1579 - Drake in California

1542 - Spanish discover San Diego Bay

1629 - Pilgrims land at Plymouth
COAST REDWOODS tower over all other trees in the world. Many individual trees exceed 300 feet in height.

Family Adventure Packs Available

If you enjoy investigating the intricacies of the natural world, if you’re curious about the little cogs that combine to make the world go around, or if you’re just plain new at this exploring business, then the Family Adventure Pack may be for you.

The “packs” are actually back packs filled with all sorts of ideas and equipment to make it fun and easy to explore on your own in the park. They were designed so visitors can learn about nature without having to have a naturalist close at hand to answer questions. The basis of the Family Adventure Pack is two activity booklets that suggest many different outdoor activities that can be easily undertaken by anyone, regardless of their knowledge of redwood forest, river or seashore. There are activities that will interest everyone, whether they are plant-lover, animal lover or all-around nature-lover.

Equipment inside the pack will help you carry out whichever of the activities you decide to do: measuring the temperature of the river in several locations or checking out different types of leaves with the hand lens. Park maps, thermometers, bug boxes, hand lenses, binoculars, compasses, yarn loops and several field guides for identifying local trees, wildflowers, seashore life, ferns and birds make up the equipment in the packs. To borrow one all you must do is leave a valid credit card or driver’s license with the naturalist on duty at any of the three visitor centers (Orick, Crescent City or Hiouchi). Packs may be checked out all day or overnight and large groups may either check out more than one pack or ask that additional equipment be added to their pack. Groups of all ages and of all levels of knowledge enjoy using Family Adventure Packs. Why not try it with your group this afternoon?

Beaches Are Intriguing Places

Beaches are intriguing places. And if you like to beachcomb, fish, watch sea gulls, enjoy waves crashing onshore, or just like to get sand in your shoes, you’ll find plenty of opportunity for that in Redwood National Park.

Ask a surf fisherman on the beach what he’s catching and he’ll no doubt obligingly display his catch - maybe a redtail perch.

Nearly always sea gulls can be seen along the beach. Take a closer look next time and you’ll find out some interesting things about these birds. First, there are many kinds of gulls and the older ones have different marking and coloring than the young ones. What do gulls eat? They are scavengers and keep the beach clean of dead creatures which have washed up. But they’re glad to get a live fish, too, and in summer will harass a poor pelican trying to make him drop his catch. The pelican is a spectacular fisherman, diving from mid-air headfirst into the water after a fish. With any luck he reappears with fish safely held in the expandable pouch of his long beak only to be pestered by all the gulls in the vicinity. The flight formation of pelicans is in a line and wingbeats and changes in direction are in a follow-the-leader fashion.

Fires are permitted with a caution: Keep them isolated from large concentrations of driftwood, and extinguish when you leave.

A fallen redwood in the Tall Trees Grove reveals shallow roots, rarely more than ten feet deep, which extend great distances outward to support trees over 300 feet tall.

REDWOOD FIELD SEMINARS

Where can you explore redwoods from horseback, study Roosevelt elk and Black bear habits, and touch the sticky tentacles of a sea anemone? Redwood National Park, in association with Humboldt State University, is offering in-depth outdoor seminars June through August.

Enjoy rare opportunities. Follow an unsuspecting elk with radio-telemetry equipment to observe an entire herd’s natural behavior. Discover wildflower meadows and ancient, tugged away redwood groves normally missed by most visitors. Learn to identify the Lady Slipper Orchid and how to photograph the delicate flower close-up. Develop identification skills for trees, wildflowers, rocks, birds, mammals, reptiles and amphibians. Enjoy a Native American salmon dinner cooked over a fire, at the site of a Tolowa village.

“Restoring the Forest Community” takes participants into the park’s back country where specialists are working to stabilize the Redwood Creek watershed, after logging in the early 1970’s, and to speed re-establishment of naturally functioning plant and animal habitats. Such a large scale project has never been undertaken by any public or private sectors.

Other topics include Night Birds, Stream Ecology, Wildlife, Reptiles and Amphibians, Basic and Advanced Nature Photography, Marine Ecology, Rocks and Gold, and several more.

Half the fun of attending a seminar is meeting people who share a common interest. Participants range widely in age and experience — from 10-year-old gold panners to 72-year-old tidepool explorers.

Registration is limited, so early sign-up is recommended. Courses generally last from one to several days. Fees range from $20 to $50 per course. Itineraries and other information are available. For a brochure call (707) 464-6100 or write: Redwood National Park, 1111 Second Street, Crescent City, CA 95501.

Please add my name to Redwood National Park’s field seminar mailing list.

NAME:

ADDRESS:

TELEPHONE:
Like to go for a walk in the redwood forest? Or along the Pacific Ocean? Or along scenic rivers or prairies? In your search for places to walk, you are invited to sample the trails listed on this guidesheet. It's a great way to enjoy and appreciate the park. Whether you are planning a ten-minute stroll or an all-day trek, Redwood's beauty can be found all along the way.

BE PREPARED for your hike by wearing appropriate clothing, footwear, and rainwear. Carry water, especially on longer hikes. Water from park streams is not safe to drink without boiling.

FOR YOUR PROTECTION, please note these reminders: Lock your car; if you must keep valuables inside, store them out of sight. Be cautious when climbing or walking near the edges of high, rocky bluffs. Watch out for poison oak, particularly in coastal and riverside areas. Roosevelt elk are wild and unpredictable — don't approach them on foot.

NATURE TRAILS with self-guiding brochures are available at Lagoon Picnic Area. You might like to sample the trails listed on this guidesheet. It's a great way to enjoy and appreciate the park. Whether you are planning a ten-minute stroll or an all-day trek, Redwood's beauty can be found all along the way.

INTERPRETIVE WALKS along several trails are led by park naturalists during the summer. Check a visitor activity schedule for information on these guided activities.

10 Minutes to All Day

A. SIMPSON-REED GROVE (0.6 mi. loop, easy). Begin at the Hwy. 199 turn-out near Walker Rd. (milepost 3.4). This trail leads through old-growth redwood forest with small streams, lush undergrowth, and giant fallen redwoods. A side trail through Peterson Grove returns to the loop. Additional trails begin directly across Hwy. 199 from the Simpson-Reed trail.

B. STOUT GROVE (0.5 mi. loop, easy). Contains park's largest redwood in volume at 16' diameter (DBH), 340' height. Year-round access is available from the Howland Hill Rd. (an old stagecoach route). From Hwy. 199, turn on the South Fork Rd., then right onto Douglas Park Rd. to Howland Hill Rd. Continue 1.1 mi. past end of pavement to the parking area, where a short walk leads down into the grove and the 0.5 mi. loop trail. Summer-only access is available by a footbridge in Jedediah Smith campground (vehicle day-use fee required).

C. NICKERSON RANCH - MILL CREEK TRAIL (2 mi. loop, moderate). Begin on Howland Hill Rd. 2.1 mi. from west end of pavement (3.4 mi. from east). Jedediah Smith S.P. This trail loop through mature redwood forest comes to a fork in 3 miles; the right fork leads to the Boy Scout Tree; the left fork leads to Fern Falls.

TRAIL MANNERS

- PETS ARE NOT ALLOWED ON PARK TRAILS. Pets can disturb wildlife and interfere with visitors’ enjoyment of the park.
- Help keep your trail clean; pick up any litter you may find.
- A picked flower soon dies. Leave all plants and flowers for others to enjoy.
- Be considerate of others. Loud noises can disturb wildlife you’ve come to see. Walk quietly, and you might catch a glimpse of...
- Everything needs water — help keep it clean for all. Treat stream water for safety reasons, or take along your own.
- Before leaving park boundaries on foot, check with adjacent land owners for permission to pass.
- Many suffer from an escaped fire; please be careful. Drown all fires. Campfires are permitted in designated areas only.
- Backcountry camping is allowed on certain portions of Redwood Creek. Primitive campsites are provided at other locations indicated on the map. All other camping is in established campgrounds only.
- Bears and other wildlife in the parks are wild animals and should be treated with respect. Wildlife is most enjoyed when viewed in its natural habitat; feeding wild animals quickly alters their normal behavior. Protect wildlife and yourself by hanging all food, soap, toothpaste, suntan oils, and other scented items or garbage at least 200 feet from camp. These items should be hung from a stout branch at least ten feet from the tree trunk, five feet below the branch and 12 to 15 feet above the ground.
II. CRESNIENT CITY AREA

1. ENDERT'S BEACH TRAIL (4.0 mi. round trip, strenuous). Trailhead located 4 mi. south of Crescent City at the end of Endert's Beach Rd. This wide path commands a bird's eye view (Coastal Trail) as you descend to a sheltered cove, a good area for viewing sea mammals.

2. DAMNATION CREEK TRAIL (5 mi. round trip, strenuous). Begin at the trailhead on Hwy. 101, south of Crescent City at the end of Endert's Beach Rd. This wide path commands a bird's eye view (Coastal Trail) as you descend to a sheltered cove, a good area for viewing sea mammals.

3. COASTAL TRAIL/LAST CHANCE SECTION (4.0 mi. one-way, strenuous). Begin near milepost 34.4 on Hwy. 101, south of Crescent City. The trail follows an old highway route through majestic old growth redwoods, crosses the Damnation Creek Trail, and follows a steep grade to Nickel Creek and the Endert's Beach Trailhead.

4. COASTAL TRAIL/DE MARTIN SECTION (6.0 mi. one-way, strenuous). Begin near milepost 16.0, this trail leads through majestic old growth redwoods. Primitive camping available at DeMartin Campground near seawa rd end of trail (no open fires).

5. SECTIONS (6.0 mi. one-way, strenuous). Begin near milepost 34.4 on Hwy. 101, south of Crescent City. The trail follows an old highway route through majestic old growth redwoods, crosses the Damnation Creek Trail, and follows a steep grade to Nickel Creek and the Endert's Beach Trailhead.

III. KLAMATH AREA

LEGEND

- Road
- Unpaved Road
- Trail
- Ranger Station
- Campground
- Picnicking
- Nature Trail
- Handicapped
- Parking

1. COASTAL TRAIL-DE MARTIN SECTION (6.0 mi. one-way, strenuous). Trailhead at N end of Wilson Creek Bridge and nearby (1.8 mi. round trip). The trail leads above Hwy. 101 and offers wide vistas of the Pacific Ocean. Paved and well-maintained, this trail provides an excellent opportunity to view wildlife and other natural features.

2. YUBOK LOOP TRAIL (1.6 mi. loop, moderate). Trailhead at N end of Lagoon Creek picnic area. Cycles gradually drop the coastal bluff with wide views of the Pacific. You can look for sea mammals, birds, and other wildlife in this area.

3. COASTAL TRAIL/HIDDEN BEACH SECTION (4.0 mi. one-way, moderate). Leads generally downhill from the Klamath Overlook to Lagoon Creek. The trail follows the coastal bluff through grassland and open forest areas offering good chances to view whales, birds, and coastal wildlife.

4. COASTAL TRAIL/FLINT RIDGE SECTION (5.0 mi. round trip, strenuous). Beginning from the trailhead on the Klamath Beach Rd., the trail follows the shoreline of Marshall Pond, then ascends into old-growth redwood forest. Primitive camping available near seawa rd end of trail (no open fires).

IV. PRAIRIE CREEK AREA

1. FERN CANYON (0.7 mi. loop, easy). Located on Davison Rd., 2 miles from Hwy. 101. Its tree-covered forest provides a perfect spot for hiking and exploring. This area is particularly good for bird watching and observing small mammals.

2. MINERS RIDGE-JAMES DIVINE TRAIL (6.2 mi. loop, moderate). Begin at Prairie Creek Visitor Center. This trail provides a scenic view of the surrounding area as well as opportunities for bird watching and exploring the local flora and fauna.

3. BIG TREE WAYFINDER (9.0 mi. to "Big Tree"). Located on Davison Rd., 20 miles from Hwy. 101. This trail provides a leisurely walk through the old-growth redwood forest.

4. CATHEDRAL TREES-SHINDOGEN TRAIL LOOP (6.5 mi. loop, strenuous). From the Big Tree, follow Cathedral Trees Trail across Cal-Barrel Rd. to ShindOgen Trail. This trail climbs 1000 ft., then descends through majestic redwoods. A walk along the Cal-Barrel Rd. may substitute for a portion of the trail. Return via the South Park and Foothill trails.
POISON OAK

"Leaves of three, let them be!"

Poison oak is a commonly found plant that can give you an itchy, painful rash. It is a shrub 12" to 30" high, sometimes a vine. Triple leaflets; short, smooth hair underneath. Early, berries fuzzy and white; later, dun-colored. Plants are dark green in spring and summer, bright red in fall, and lose their leaves in winter. Remember... clothing, shoes, tools and smoke from burning plants carry the poison, too.

Trail information and detailed trail maps can be obtained from:

Redwood National Park HQ: (707) 464-6101; 1111 2nd St., Crescent City, CA 95531

Hiouchi Ranger Station: (707) 458-3134; 10 miles east of Crescent City on Highway 199

Redwood Information Center: (707) 488-5801; P.O. Box 7, Orick, CA 95555

V. ORICK AREA

1. FOREST RENEWAL TRAIL (1.5 mi. round trip, moderate). Drive 3 mi. N of Orick on Hwy. 101, then W on Davison Road 2 mi. to the trailhead. Early stages of redwood forest regeneration can be seen in this area which was logged in the early 1960's.

2. LOST MAN CREEK TRAIL (1.5 mi. round trip, easy). Drive 3.5 mi. N of Orick on Hwy. 101, then 1 mi. E to the trailhead. This trail leads past the World Heritage dedication site (in about 100 yds.), then further to a cascade on Lost Man Creek.

3. LADY BIRD JOHNSON GROVE (1.0 mi. loop, easy). From Hwy. 101, drive 2.5 mi. E on Bald Hills Rd. (17% grade; trailers not advised). This trail leads through early stages of redwood forest to the 1968 National Park dedication site. A self-guiding trail brochure, available at the trailhead and park ranger stations, describes the natural history of the redwood forest.

4. REDWOOD CREEK TRAIL (1.5 mi. to summer-only bridge, 8 mi. to Tall Trees Grove in summer, one-way; moderate). From Hwy. 101, drive 0.3 mi. E on Bald Hills Road; turn right to the trailhead. Check shuttle bus schedule for additional transportation arrangements, if desired. Primitive camping available on river bar upstream of summer crossing and up to 1/4 mi. from Tall Trees Grove. (Free camping permit available at the trailhead or Redwood Information Center.

5. TALL TREES-EMERALD RIDGE LOOP (4 mi. loop, summer-only, strenuous). Check the shuttle bus schedule for transportation. The regeneration of a recently cut redwood forest is seen en route to the trailhead. The Tall Trees Trail descends 800 ft. into the grove containing the world's tallest known tree (367.8 ft.). Follow Redwood Creek upstream to return to the trailhead via the Emerald Ridge Trail. (Allow 4-5 hrs. for this visit, including the shuttle.)
By John Sacklin

Environmental Specialist

Fresh from international travel, ocean vistas, and sweeping views of the redwood forests, are all part of the Redwood National Park experience for millions of visitors to this northern California coastal region. In fact, they may even enjoy excellent air quality during their stays and be pleasantly surprised. Redwood National Park is generally considered to be quite a good, but national parks are not immune to the air pollutants that often attributed just to cities. Air currents do not recognize political boundaries such as national park boundaries and they can carry pollution from urban areas to parks, sometimes over hundreds of miles. Air quality in many national parks around the United States suffers from pollution, which in turn can affect the health of plants and animals as well as impair views of scenic wonders.

Concern about pollution in national parks began in the southwest in the 1960s when smoke plumes from newly constructed and old f ired power plants could be seen for tens of miles and were visible in distant viewsheds. By the late 1970s, smog was appearing in many national parks such as Yosemite and Shenandoah. These concerns over worsening air quality led to Congressional action by the 1970s. Congress directed that the National Park Service insure that the values of the parks were not being degraded by air pollution.

The National Park Service mandate to manage our national parks as a resource is a particularly difficult one. Visitor enjoyment and health, the preservation of cultural resources, and the integrity of natural systems depend on it; yet air quality is unlike most other park resources. The wind blows where it will, and sometimes park managers must consider pollution sources many miles away.

Much of the National Park Service's efforts have been focused on working with state, local, and other federal agencies to improve air quality in the surrounding areas. Many national parks around the United States are made up of a mosaic of state and federal lands and water that are for everyone's use and enjoyment. Individual parks are managed for recreation uses and for the protection of specific cultural properties of outstanding universal value to mankind. Besides Redwood National Park, these include Mesa Verde, Cahokia Mounds, and Independence Hall. These are just a few of the 186 sites, over 700 million acres of these public lands that are protected and managed by the National Park Service. But like all other national parks, Redwood National Park is not immune to the air pollutants that come from urban areas to parks, sometimes over hundreds of miles. Air pollution is a problem in these areas, and the National Park Service is continually monitoring the effects of air pollution on plant and animal life. Air pollution is a health hazard and it is a problem on private property as well as in parks and recreational areas. Air pollution affects most park visitors, and it is a problem that the Park Service is committed to solving.

Many of us enjoy America's outdoors on lands and waters that are for everyone's benefit. This vast public domain encompasses the best that America has to offer.

The federal government manages over 76 million acres of public lands, including national parks, national forests, wilderness areas, national monuments, and national parks and recreation areas. Recreation opportunities also abound on millions of acres of state parks, forests and preserves, neighborhood playgrounds and urban open spaces.

Important symbols of our past are protected for present and future generations as well. These historic sites and landmarks preserve places and memories of the great individuals, cultures, occasions and examples of architecture that make up our national heritage. Although most people appreciate and enjoy the beauty and the history of our national parks, some, with the best of intentions, are responsible to take care of the country, in urban and rural areas, public and private. They should be considered cultural resources and their destruction can mean the loss of many resources that have been littered, vandalized, hoisted, burned or poisoned. Each year vandalism in the national parks costs over $260,000. Many natural, historical and archeological resources are irreplaceable; if harmed, they are damaged or lost forever.

Some people have not realized that their carelessness is damaging the resources they share with their children and fellow citizens. Many people have forgotten or have not considered how they can help to clean the land or how to leave the lands better for those who follow. The public lands will be subject to greater use. Estimates are that recreational visits to the public lands have risen 33 to 40 percent in just the past decade. Increased use often comes in increased opportunities for misuse or abuse.

The "Take Pride in America" campaign is designed to instill in citizens a greater sense of ownership, pride and responsibility for our public lands and to reduce destructive behavior. In every State, people are involved in activities ranging from outdoor stewardship and self-policing programs to "watch" programs or hotlines to report vandalism, wildlife poaching, theft, and other destructive activity. Others help park for parks, trails, shorelines, campgrounds, and trails. The National Park Service is committed to solving this problem.

We can enjoy our magnificent lands, waters, wildlife and history; but we must help care for them to ensure they will be everlasting. Individually, we can make a difference. Together there is no limit to what we can do.

Take Pride in America! This land is our land.

REDWOOD NATIONAL PARK
— A WORLD HERITAGE

What does Redwood National Park have in common with Syria's ancient city of Damascus, Tanzania's Ngorongoro Conservation Area, South Africa's KwaZulu Natal Parks, Spain's Pyrenees, Canada's Dinosaur Park, and many other World Heritage Sites? They are all World Heritage Sites, designated by the 21 member World Heritage Committee under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO).

There are currently more than 186 sites on a select list of protected areas around the world which recognize natural and cultural properties of outstanding universal value to mankind. Besides Redwood National Park, the Iguazu Falls, Yellowstone, Grand Canyon, Olympic, Mammoth Cave, Great Smoky Mountains, St. John Virgin Islands National Park; Wrangell St. Elias and Statue of Liberty National Monuments; San Juan and Independence Hall National Historic Sites; Cahokia Mounds State Historic Site; and internationally significant properties in some 49 foreign countries. It is without question that the redwoods are of international interest and appeal. The considerable public interest in preserving redwoods is demonstrated by visitation from all over the world, and by the willingness of many to contribute substantial monies for the purchase of dedicated groves to be preserved in parks. This stems from many attributes— their size as the tallest of living things, their beauty and ability to withstand fire, insects and diseases, the fact that they grow nowhere else on earth and are, in a sense, a remnant specie dating from the age of the dinosaurs — that create a strong sense of national pride, interest and admiration. More importantly, they are a very special inspiration.

The selection of the Park as a natural heritage site is based on fulfillment of one or more of the following criteria: Sites must be outstanding examples representing the major stages of the earth's evolutionary history; be outstanding examples representing significant ongoing geological processes, biological evolution, and man's interaction with the environment; contain superlatives natural phenomena, formations or features of areas of exceptional natural beauty; or contain the most important significant natural habitats where threatened species of animals or plants of outstanding universal value still survive.

The committee which approves properties for inclusion on the World Heritage List was established by the World Heritage Convention in 1972. This committee convenes in 1979, and the park has been designated a World Heritage Site since 1977. The park is located in the state of California in the United States, and it is one of the few national parks that are integrated into the national forest system.

The park is also monitoring the effects of air pollution on plants. Generally, there is little knowledge about the effects of air pollution on plants. Most research has focused on farm crops rather than native plants found in national parks. However, it is known that some lichens are particularly sensitive to air pollution. Lichens are primitive plants, composed of algae and fungi that grow on trees, shrubs, rocks, and soils. They can be used as biological indicators to trace changes in pollution levels (especially sulfur oxides) and can serve as an early warning of other more subtle and extensive problems that may be occurring.

Through monitoring of air pollution at Redwood National Park and other national parks around the United States, the National Park Service will have a better understanding of how air pollution is affecting park resources and visitors' enjoyment of them.

A Breath of Fresh Air

Visitors may see California Gray Whales in the area. Their spring feeding in the rich waters of the Gulf of California and their wintering near the shoreline is a spectacular sight. California Gray Whales are among the wildlife of the red-woods. They are frequently seen along Highway 101, near Prairie Creek. Parking lines have been constructed to allow you to safely get off the road in this area. While looking for elk, turn your am radio dial to 160. The message will tell you about the life cycle and habitat of the elk.

Redwood National Park and neighboring state parks were dedicated as a World Heritage Site during a ceremony at Lost Man Creek.

California Gray Whale

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Superlatives In Trees

Oldest? Largest? Tallest?

Coast redwoods tower over all other trees in the world. Many individual trees are over 300 feet tall. The current title holder for tallest measured tree in the world is 367.8 feet tall, discovered in 1963 by the National Geographic Society. It is located near Redwood Creek in the southern end of Redwood National Park.

The current tallest tree is accessible by hiking trail or shuttle bus, but other impressive redwoods are near roads and can be reached by automobile. Although coast redwoods are the tallest, the giant sequoias (or Sierra redwoods) exceed them in bulk, which takes diameter into consideration, making the latter the largest, but not the tallest.

Giant sequoias are known to grow to nearly 400 years of age, coast redwoods to about 2,000 years. Average age is considerably less, however, in the 300-700 range for coast redwoods. Not the oldest living things at all, both types of redwoods are outlived by California’s bristlecone pines at high mountain elevations, some of which surpass 5,000 years.

WHERE THEY GROW: Two redwoods are native to California — the giant sequoia grows only on the western slope of the Sierra Nevadas, and the coast redwood only along the coast from about the Oregon state line south to the mouth of Monterey. They grow in Mediterranean-type environments — summers are cool and dry, winters moderate and wet. Up to one hundred inches of rain falls each year. Summers are often foggy. Specific soil types vary from place to place. They grow within 30 miles of the coast, no higher than 3,000 feet above sea level. They usually grow largest on the flood plains of streams and rivers.

From fossil records, we know that species of redwood trees have been growing for 130-140 million years, since the time of the great dinosaurs. These plant fossils have been found all over the Northern Hemisphere in places where today there is arctic ice and in places where it is hot, dry desert.

HOW THEY GROW: The coast redwood can reproduce by both seeds or sprouts, but the giant sequoia can only grow from seeds.

Coast redwood cones range in size from about 1 1/2 to 2 inches long; their leaves are flat, needle-like, and arranged in flat sprays. However, cones of the giant sequoia range from 1 1/2 to 3 inches long; their leaves are small, scale-like and spirally arranged along the twig. Seeds of the coast redwoods number 50 to 60 seeds per cone; the larger cones of the giant sequoia contain 100 to 300 seeds. There are about 120,000 redwood seeds in a pound.

The wood of the coast redwoods is strong, and highly resistant to decay; that of the giant sequoia is lighter and more brittle.

Today's visitors to the hostel will also be creating an echo of early history. The DeMartian family was known to open their old redwood hostel to visitors in need of a night's lodging and meals, all for the nominal charge of 25 cents. Hospitality to visitors seems to have been turned into the bones of the old house.

American Youth Hostels, Inc., the new proprietor, continues the tradition of warm hospitality and modest rates — $3.25 for adults, and cook your own meals in a well-equipped kitchen. The Redwood Hostel is located 12 miles south of Crescent City on Highway 101 at Wilson Creek Road. Local bus service is available. For more information call 1-800-442-4226.
The ancient art of basketry was mastered by Native Americans and Park Lands. Among the mainstays of the diet were how to weave baskets of excellent quality and usability.

By Ann King-Smith
Archaeologist

Park Wildlife

The largest of North American elk, Roosevelt elk prefer grazing in forest openings. A field seminar on elk ecology and management will be offered this summer.

Redwood National Park is home to two of the country’s largest wildlife species, the Roosevelt elk and the California black bear. Elk are abundant in the park and offer visitors ample opportunities for observation. They may often be seen in meadows, pastures, and prairies, and, if you are quiet, may be observed for long periods. However, bears are less commonly seen, and then for only brief periods as they cross roads or trails.

The Roosevelt elk is the largest of the six recognized subspecies of elk in North America, with bulls weighing up to 1,200 pounds. They once ranged from southern British Columbia to south San Francisco Bay. Primarily due to interference with agriculture and their suitability as a food source, intense hunting eliminated them from the southern part of this range by the mid-1800s.

Before timber harvest began in the region, elk used both forests and grasslands for browsing and cover, but the prairies and coastal shrublands probably provided the bulk of the available browse. Since 1850, more than 50,000 acres of redwood vegetation within the park have been cleared or selectively harvested. The increased growth of young trees, shrubs, and grasses following logging provide more food for wildlife for a few years. The rapid increase in elk population which should have resulted from the appearance of cleared loggered areas has probably been suppressed by illegal hunting.

Since the expansion of Redwood National Park in 1977, new groups of elk have established themselves or increased in number in areas previously used only lightly. With protection, the elk population should continue to expand in the lower Redwood Creek and the May Creek drainages and northwest along the coast along the Klamath River. As vegetation succession brings about a return to the redwood forest, what is now good elk habitat will be less productive, causing the elk population size, structure, and distribution to change again. To provide information for management of the elk population in the changing environment, the park has begun a research project. This involves live-trapping and anesthetizing the animals, fitting them with radio collars, taking blood samples and hair samples, monitoring movements, and detailed habitat analysis.

The project is designed to yield home range, distribution, and habitat use data that will provide the basis for a long-term, comprehensive elk management plan.

Black Bear

Logging has increased the distribution and availability of bear habitat in the same manner as for elk. The result has been an increase in the population of bears. Prior to the park expansion of 1978, there was a comparatively low incidence of "bear problems," relative to other parks. Part of the reason for this may have been that before the park was expanded, visitors were using the narrow band of old-growth forests that were the state and national parks, while bears were more abundant in the productive cutover lands. The result was a separation of visitors and bears, and a low potential for human/bear interactions. However, the expansion to the park resulted in prime bear habitat being acquired. The expected influx of visitors and employees into this new park area increases the bears' potential for familiarity with and loss of fear for humans, for experience with human-food, and to obtain food. These resulting behavioral modifications increase rates of interaction and escalate the risk of personal injury and property damage.

Most national parks with significant bear populations have adopted bear management plans after unfavorable bear/human relationships developed. In many of the older bear-populated national parks, extensive availability of artificial food sources increased bear numbers and altered the bears' natural behavior and foraging patterns. Redwood National Park has the opportunity to study bears and manage visitors on a preventive rather than a reactive basis.

To the end, the park has completed a black bear research project designed to provide management with comprehensive factual knowledge of bear population dynamics, behavior, ecology of human/bear interrelationships, and to evaluate the management programs affecting the black bear population. This information will ensure that campgrounds are planned and located to minimize the potential for adverse human/bear interactions.

Native Americans and Park Lands

The native art of basketry was mastered by Indians in the redwood region. A Yurok basket weaver, displaying baskets in a regional museum.

By Terry Belser
Park Wildlife Biologist

Redwood National Park is home to two of the country’s largest wildlife species, Roosevelt elk and Chilula.

For thousands of years, the Tolowa, Yurok and many other Native American groups have lived here and in the traditional territories of three groups of California. Although quite distinctive from each other, these three groups shared many similarities in their traditional lifestyles. The village with its bandstand was the important unit, since a tribal organization and chief did not exist. Based in these large settlements, people traveled at certain times of the year to follow a seasonal subsistence round. Salmon and steelhead were taken in the fall. These two items were mainstays of the diet. In addition, a wide variety of large and small game, birds, shellfish, sea mammals, seaweed, seeds, bulbs and berries were utilized. Resources which were not available locally were obtained through wide trade networks which connected groups throughout northern California.

The Native American material culture is elaborate; it includes redwood plank houses and redwood canoes; beautiful baskets - both utilitarian and ceremonial; bows and arrows, stone and bone items, and fine dance regalia. Northwest Indian cultures have a rich, elaborate spiritual and ceremonial world. Certain people train to be doctors or spiritual leaders. The Native American material culture is recognized with a tribal council and reservation or rancheria; others have contributed through efforts that led to federal recognition. Many of the traditional aspects of the culture continue; language, dances, basket and canoe making, fishing, hunting and gathering. It is important to remember though, that all cultures change through time so things are not done exactly the way they were hundreds of years ago.

Redwood National Park has actively worked with the local Indian communities for a number of years. The park has Native American Heritage Advisory Committees, through which many issues have been discussed. Indians are consulted about proposed projects, interpretive exhibits and protection of archeological sites. Park employees are held on Indian lands within park lands and the park has donated redwood for boats and dance floors. This is an important contribution towards the continuation of these cultures.

Note: Indian artifact exhibits may be seen at the Trees of Mystery in Klamath, the Clarke Museum in Eureka or at the Hoopa Tribal Museum.
The National Park Service policy calls for maintaining Redwood National Park as a vestige of primitive America, a place where natural processes operate un influenced, if possible, by the technological advances of modern man. This charge is most easily accomplished in parks whose boundaries follow natural features rather than political lines.

The ideal boundaries of a national park are drawn so as to preserve whole ecosystems, such as entire watersheds, islands, or mountains. A park can be more easily protected from outside influences when its ecosystems lie entirely within the park boundary.

Such was not the case when Congress established Redwood National Park in 1968. The boundaries were the result of political compromise and they divided watersheds into private and federal lands. In addition, about 20% of the park had already been logged while under private ownership before 1968.

In the southern end of the park a narrow corridor of land along Redwood Creek was acquired to protect the world’s tallest trees. This 9-mile long “Worm,” as it was called, was downspaced from private timberlands where there were intensive logging operations. These slopes have high natural erosion rates and are subject to intense winter storms. When these natural factors were combined with large scale logging, resulting slope erosion and stream sediments threatened the stream-side forest and aquatic ecosystems.

To protect this watershed, Congress added 45,000 acres in the Redwood Creek watershed to Redwood National Park in 1979. Approximately 39,000 acres of the 1979 land acquisitions have been logged in the 1960’s and 1970’s. The slopes are marked with 200-300 miles of former logging roads and 2,000-3,000 miles of skid roads. This land is now the site of a large-scale land rehabilitation program to stabilize the watershed and to speed re-establishment of naturally functioning plant and animal habitats. Congress authorized $33 million for the 19-15 year effort. Such a large scale project has never been undertaken by either public or private sectors.

Fire is no longer viewed as a major enemy, rather a natural factor which under prescribed conditions can be used to help achieve resource management objectives to preserve natural environments.

In 1980, the park began a program of prescribed burning in the prairies and oak woodlands. Park staff deliberately set fires under carefully designed conditions. Each prescribed burn has a plan and specific set of objectives. When the time, wind, humidity, temperature and other factors are right, the fire is set. Trained personnel observe and monitor the fires to provide for public safety and document fire behavior and results. At the same time, researchers gather information regarding fire history, frequency and long-term fire effects.

Watershed rehabilitation began during 1976. Erosion problems were reduced and re-vegetation was started on 5 sites totaling 230 acres. In 1979 and 1980, the program was expanded and nearly 2,000 acres were treated. Now, the most critical sites in the park are rehabilitated and on their way to a natural ecosystem.

The rehabilitation program is a step-by-step process. First priority is to minimize erosion. When an area is logged, not only are large trees cut, but shrubby vegetation which is a protective ground cover on steep slopes, is destroyed. Heavy log ing equipment also compacts the soil, preventing rain water from penetrating. This increases the runoff across suitable slopes, the water curving deep gullies.

By Mary Hektner
Park Botanist

If you visit the park on a typical foggy summer or rainy winter day, you may wonder how fire can be a part of the redwood ecosystem. The wet climate is deceiving, and even a casual walk in the forest reveals that evidence of past fires is everywhere. The “goosepens” in redwood trees are scars caused by repeated fires and many of the trees have fire-charred bark far up their stems. Before the era of fire suppression, natural lightning fires periodically burned through the forest, consuming forest litter and understory trees and seeding. On the whole, these fires were probably of relatively low intensity and the overstory redwoods were seldom killed.

Studies by park researchers have shown that during pre-settlement times, large stand-altering fires occurred as infrequently as once in every 200-500 years in the park’s coastal redwood forests, at 100-250 year intervals on intermediate sites and at 30-40 year intervals in the most inland areas.

In the nearby drier Bald Hills grasslands and oak woodlands, lightning fires started more easily and were therefore more frequent. In addition, the Native Americans intentionally set fires to maintain the open prairie and oak woodlands, to make food gathering easier, attract wildlife to the new plant growth and to stimulate growth of basket making materials. The effects of decades of fire suppression in the Bald Hills is made evident by extensive Douglas-fir invasion into the prairies and oak woodlands. When fires were frequent, invading fir seedlings were easily killed and the grasslands and woodlands remained open. Without fire to kill the seedlings, the fir matures, oak and prairie species are shaded out and the area gradually converts to a Douglas-fir forest.

Park researchers estimate that approximately 1,000 acres of prairie and oak woodlands have been lost to fir invasion due to the lack of Indian-started fires and fire suppression.

Today we recognize that fire is a natural phenomenon and an integral part of the ecosystem. Fire is no longer viewed as a major enemy, rather a natural factor which under prescribed conditions can be used to help achieve resource management objectives to preserve natural environments.

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The need to heed Smokey the Bear’s advice to prevent careless human-caused fires is as important as ever and should continue to echo in our minds. Fire suppression is an ever present requirement where human life or property are endangered. However, through closely observing and monitoring prescribed fires and their effects, our knowledge of natural fire ecology continues to grow and our ability to perpetuate the natural ecosystems of the park is enhanced.

FOR MORE INFORMATION...