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# JDSF NEWSLETTER



**NEWS OF THE JACKSON DEMONSTRATION STATE FOREST**  
California Department of Forestry and Fire Protection  
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## JDSF PASSES FIFTY YEAR MARK 1947-1997

*by Richard A. Wilson<sup>1</sup>*

Jackson Demonstration State Forest (JDSF) celebrates its 50<sup>th</sup> anniversary this year. The modern roots of the state forest can be traced back to World War II, when an internationally-acclaimed forestry professor from Berkeley was asked by California's business leaders to speak on a critical wartime economic issue of his choice. The occasion was the California War Conference in Los Angeles, sponsored by the State Chamber of Commerce, to coincide with the first anniversary of Pearl Harbor.

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<sup>1</sup>Richard A. Wilson has served as Director of the California Department of Forestry and Fire Protection for the past 7 years. He owns a ranch in Covelo and has been active in Mendocino County conservation issues for 40 years.

The professor was Dr. Emanuel Fritz, the world's leading authority on California coast redwood. The state's business leaders no doubt expected a patriotic account of the timber industry's contribution to the war effort. But Dr. Fritz surprised them with a rather blunt indictment of the "profligate use of our timber and the wasteful and thoughtless cutting practices that foolishly regard timber a one-crop resource."

Of course Dr. Fritz was referring to the near-liquidation of California's north coast old-growth forests during the previous 90 years. Undaunted by the uncomfortable rumblings of his audience, Fritz hastened to explain that, "Wars not only must be fought and won, but their aftermath must also be prepared for."

The message he had come to deliver, he said, was really about the future; about healing and restoring as much of California's cutover land as possible. The first step, he proposed, should be to "create an extensive system of state forests by acquiring idle cutover lands and restoring their productivity, so that once again they will produce timber and payrolls." It was not too soon to begin thinking about post-war construction and public works, he said, and forestry was a long-term enterprise. Concerning the growing of trees, Fritz was of the opinion that it was impossible to plan too far ahead. And California's forest resources were in dire need of attention.

### **"CUTOVER, BURNED OVER AND OTHERWISE DENUDED LAND"**

That winter Fritz was named to a three-man committee by the state's Board of Forestry to study and recommend a program for the acquisition and development of state forests in California. The committee targeted a million acres,

much of which was "watershed land that has been cutover, burned over and otherwise denuded in such a manner as to jeopardize its watershed value."

They urged the state to acquire as many of these lands as possible for "multiple use development, including the preservation of soil and watershed cover, production of future forest crops, protection of wildlife, and development of recreational facilities."

"Fritz prepared a 12-page proposal for the Board of Forestry entitled "Suggested Purchase Areas," which evaluated five potential areas in Humboldt, Mendocino, and Santa Cruz counties. He particularly liked Redwood Purchase Area No. 3, located "Eastward from Mendocino City and including the watersheds of Big River, Caspar Creek, Jughandle, Mitchell and Hare Creeks."

Fritz wrote, "In the opinion of the writer, this is the best area for the first state forest in California."

The following year, State Senator George Biggar successfully proposed the establishment of a Senate Forestry Study Committee. Senator Biggar, who represented the north coast from the San Francisco Bay to the Oregon border, was a Mendocino County rancher from Covelo

Biggar's Forestry Study Committee concluded that the state had an insufficient volume of timber for its future needs due to "past depletion by cutting, fire, and insects, without accompanying measures for replacement." Given the current state of land ownership, management practices and tax policies, there was a "need for the public to acquire such lands for eventual reforestation and creation of managed state forests."

Upon receiving the committee's findings, Governor Earl Warren announced his intent to es-

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establish a system of state forests to be administered by the California Division of Forestry (CDF).

Senator Biggar responded by authoring legislation to acquire lands for state forests, for the purpose of "protection and reforestation of forest lands, management for demonstration purposes, and sale of products therefrom." In May 1945, Governor Warren signed Biggar's Senate Bill 560 into law. Thanks to the efforts of a rancher from Covelo and a professor from Berkeley, California began to establish a system of state forests.

#### **"WALK HUMBLY, DEAL JUSTLY"**

A few months later CDF received a package from the Caspar Lumber Company. Inside was a ten-page report with the unusual title, "JACKSON FOREST: 'Walk humbly, Deal Justly.'"

The report's first sentence read, "The Caspar Lumber Company hereby offers to the State of California 46,681 acres, more or less, and such other lands as may be acquired within the boundaries thereof." The offer went on to describe the lands in question and the company's terms of sale, which included naming the proposed state forest after the individual who had founded the Caspar Lumber Company in 1864, Jacob Green Jackson. An immigrant from Vermont, Jackson operated the company until his death in 1901. His lifelong motto was, "Walk humbly, deal justly."

It so happened that the Caspar lands fell within Fritz's Redwood Purchase Area No. 3, which he had called "the best area for the first state forest in California." And since Mendocino County's own Senator Biggar had authored the state forest legislation (with Governor Earl Warren's blessing), it came as no surprise when the Mendocino County Board of Supervisors enthusiastically endorsed the offer by the Caspar Lumber Company to sell its land to the state.

On November 1, 1946, the Board of Supervisors passed a resolution recommending that the state purchase the Caspar lands "for the purpose of reforestation during periods of unemployment and at other times, and for the further purpose of using said lands for the demonstration, protection, and management of cutting and

logging practices designed to promote reforestation, and for the further purpose of protecting and managing said lands to the end that they will produce as nearly as possible their maximum yield of useful forest products on a basis of continuous production."

#### **THE CREATION OF JACKSON STATE FOREST**

Senator Biggar's legislation had mandated the formation of a State Forest Purchase Committee, composed of the Governor, the state's Director of Finance, the Director of Natural Resources, and the Chairman of the State Board of Forestry. In 1947, with Governor Warren taking the lead, the committee authorized purchase of the predominately cutover forest lands offered by the Caspar Lumber Company for slightly less than \$1.5 million.

That same year, the U.S. Department of the Interior deeded an additional 5,426 acres to the state. This parcel, known as the Mendocino Woodlands, had been acquired by the federal government from a number of owners, principally the Mendocino Lumber Company, at a cost of just over \$67,000. Together, these parcels became known as the Jackson Demonstration State Forest, or *JDSF*.

The State of California fell far short of its goal to establish a million-acre state forest system. Today, while the State of Washington has 4 million acres of state forests, and Oregon has a state forest system of 800,000 acres, California has just 71,000 acres in state forests. *JDSF* is by far the largest, and comprises over two-thirds of California's state forest acreage.

Perhaps more importantly, *JDSF* is unique among publicly owned forests in the redwood region with its multiple use, conservation management approach. In contrast to state and national parks, *JDSF* permits public access for such activities as plant collecting, hunting, and the purchase of various forest products. These activities are all concurrent with recreation, education, and the management of the timber resource.

The guiding management philosophy of *JDSF* is to conduct innovative demonstrations, experiments, and education in forest management while achieving sustained production of timber

through the application of sound forest management techniques. This philosophy is reflected in the two major roles that have evolved for JDSF during the first half-century under CDF's management: as a learning institution, and as a model for resource sustainability. This twin role was re-emphasized in 1981, when the State added the word *demonstration* to the forest's official name.

Was the purchase of these "cutover and burned over lands" a good investment for the people of California? Consider that JDSF is the site of some of the best documented and longest running watershed and silvicultural studies in the world. Teachers and students from U.C.Berkeley, Humboldt State, Sonoma State, Cal-Poly San Luis Obispo, U.C.Davis, College of the Redwoods, American River College, Sierra College, and Santa Rosa J.C., and other colleges, use JDSF regularly as a field learning laboratory.

Meanwhile, in the 50 years since the state's taxpayers purchased these lands for just over \$1.5 million, management activities have generated over \$160 million in revenues to the state and Mendocino County. This is more than 100 times the value of the state's original investment.

More impressive, however, is the fact that the volume of growing timber has quadrupled during that same time due to the concerted practice of sustainable forestry on JDSF.

Sustainable forestry means harvesting no more than one grows on a forest-wide basis. In fact, harvest levels on JDSF are only about 60 percent of the annual growth volume. This is why the forest has so much more timber growing today than when the state purchased these forest lands 50 years ago.

What does sustainable management of JDSF mean economically to the residents of Mendocino County? For one thing, last year saw a record amount of dollars returned to the county from property and yield taxes resulting from JDSF's harvesting activities. In 1996, this amounted to \$626,140, more than half of which went to Mendocino County's public schools.

The sustainable approach to forest management on JDSF means harvest levels draw only a

portion of the "interest" earned on the forest's growing "principal." Because of this conservationist approach, I am confident that Mendocino County will enjoy these benefits indefinitely into the future.

## Jackson Demonstration State Forest Prepares a Habitat Conservation Plan

Director Wilson decided to have CDF prepare a Habitat Conservation Plan (HCP) for JDSF, which will help ensure long-term protection and enhancement of threatened and endangered fish and wildlife species and their habitats.

Habitat Conservation Planning is a federal concept. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) review, approve, and enforce compliance with these plans.

Plan elements generally include:

- List of species present
- Assessment of potential impacts to these species
- A plan to limit potential impacts
- Assurance that sufficient quality habitat exists or is created during the plan period
- A comprehensive monitoring plan to assess habitat conditions and impacts over time.

An HCP will allow JDSF to manage for *long-term* results, rather than conduct species surveys on a project-by-project, area-by-area basis, as has been the practice. By subscribing to the HCP process, CDF has made a commitment to monitor the fish and wildlife populations every year. And although monitoring can be very expensive, it will pay dividends in terms of species protection and timber management on the state forest.

Part of the HCP effort involves issuing an *Incidental Take Permit*. This permit forgives accidental or incidental harm to a listed species, if it should occur. The Department must avoid practices that are known to be harmful to threatened or endangered species. The permit allows for *accidental* harm, as long as the over-riding management goal is to maintain, enhance, rehabilitate, and/or create habitat. For example,

removing a stream blockage could harm a few fish, but creates more habitat upstream.

The HCP species of special concern are *coho salmon*, *steelhead*, *northern spotted owl*, and the *marbled murrelet*. The HCP will address many other species as well.

Habitat conservation is an important element of sustained yield forestry. Jackson Demonstration State Forest staff hopes to learn more about the management and identification of species that do, or could, inhabit the redwood forest.



**Monitoring fish at the Noyo River**

### Parlin Large Woody Debris Placement Project

The California Department of Fish and Game (DFG) recently completed a survey of JDSF's west-end streams.

DFG used the habitat inventory methodology presented in the *California Salmonid Stream Habitat Restoration Manual* (Fics) and Reynolds, 1991 rev. 1994). According to their findings, DFG characterized the streams generally as having good canopy cover, with well-vegetated stream banks and numerous shallow pools. There is a lack of deep pools, however, and the streams received a low shelter rating (a measure of escape cover for fish), with very little large woody debris (LWD) in the channel.

LWD is created in nature by rotten logs or wind-thrown trees and branches rolling or falling into the watercourse. Until recently, harvesting rules

have specified cleaning all woody debris off stream-banks and *out* of streams to prevent blocking upstream fish migration. Unfortunately, the effect has been to increase stream velocities, which removes natural pools, shade, food, and cover used by the fish. Now, great care is taken to *leave* the woody debris on the ground and let mother nature take over. It will take a long time to see results.

With encouragement from DFG, the JDSF staff decided to experiment with artificially introducing large woody material in streams, to see if this would accelerate creating habitat for anadromous fish on the state forest.

JDSF selected Parlin Creek for the experiment. Parlin Creek drains a watershed of approximately 4.3 square miles. Summer base runoff is approximately 0.2 cubic feet per second (cfs) at the mouth. Elevations range from about 170 feet at the mouth of the creek, to 1200 feet in the headwater areas. Redwood and Douglas fir forest dominates the watershed. The watershed is located within Jackson Demonstration State Forest and is managed for timber production.

A timber harvest plan was already written for this watershed, which coincidentally prescribed abandoning stream-side roads. There would be plenty of woody debris around to use in the experiment, and there would be no traffic or roadside impacts to account for later.

There are three desired results of adding LWD over time that will be measured:

1. Any increases in depth and complexity of pools.
2. Number of new pools created.
3. Impact on breaking up long riffles and any reduction in winter flow velocity.

The work was performed in the fall of 1996 as part of the timber sale contract. 'Large Woody Debris' was introduced into the stream channel. This is a big scientific term for a simple imitation of nature...falling or dragging trees, logs, and root-wads directly into the active stream channel. The pieces of wood were free to float and come to a new hydrologic equilibrium. The project took five days to complete.

After the project was complete, DFG staff inventoried the diameter and length of wood placed in the stream: its location, orientation, and maximum water depth where the project piece contacted the stream bottom. DFG found that over a project stream length of 10,300 feet, 163 pieces of wood were added. This averages out to one piece every 65 feet.



### ***Examining Coho salmon fry***

In 1997, DFG re-measured the same parameters. While some woody material moved, there was no damage to bridges or stream banks. DFG measured and tagged all the new woody material that entered the stream channel this year. In addition, they sampled coho and steelhead numbers directly. The next newsletter article will summarize the latest information gathered by Fish and Game.

### **Anadromous fish**

▲ three year habitat-typing project is now complete. The California Conservation Corps, in cooperation with DFG, sampled and assessed every major stream on JDSF. The resulting data will serve as a baseline for comparison when

assessing the impacts of various projects, such as the Parlin Creek restoration project (see above). Habitat-typing also will help identify areas suitable for demonstrations and experiments.

This project also documented the location and extent of juvenile coho and steelhead in the upper reaches of JDSF streams.

Three years of data coincide with the three-year life cycle of these fish. In the first year, salmon and steelhead hatch and spend that year in the stream, then head back to sea for two years before returning. In effect, there are three different populations of each species of fish occupying the same stream. Instead of having three points on one graph that might give an indication of population number trends, there is only one point on three separate graphs. As one might guess, it takes many years to understand the dynamics of fish populations in assessing their response to stream habitat changes. JDSF staff hopes DFG will continue to assess anadromous fish presence on JDSF in the years to come.

### **Owls, Murrelets, and Goshawks**

■ For several years, the California Department of Fish and Game has been under contract to monitor northern spotted owls, marbled murrelets, and goshawks. The 1997 surveys indicate two young owls successfully fledged, each from a different pair of adults. There were ten active territories, which is about average, based on past surveys.

DFG identified and monitored several potential *marbled murrelet* sites throughout the forest. As of 1997, no marbled murrelets have been detected.

DFG conducted intensive surveys for *goshawks* in five locations last year. There have not been any goshawks detected to date on the state forest. Few nests have been discovered in the redwood forest type, and JDSF is on the extreme edge of the goshawk range. While this makes it difficult to determine goshawk nesting preferences, it will also make it quite exciting if any are detected in the future.

## DEMONSTRATION TOURS IN 1997

This was a busy year for tours. JDSF serves as a learning institution for professional and college foresters and biologists locally and all over the world. All tours given would be too numerous to mention. Some of the regular annual and a few of the more interesting and special tours this year included:



### MUSHROOM STUDIES

- Henry Shaw, Mycological Society of San Francisco
- Dave Aurora (author of *Mushrooms Demystified*)—Santa Cruz
- John Taylor, UC Berkeley—annual collection
- Sonoma State Univ.—annual collection
- Fungus Federation of Santa Cruz
- College of the Redwoods annual mushroom collection

### TRAINING AND OTHER TOURS

- Americorps of Northern California— training on fish habitat assessment
- Louisiana Pacific Silviculturists—Growth and Yield Studies
- Georgia Pacific, Atlanta—Forest Research tour

### GENERAL FORESTRY STUDIES

- Japan: Eight professional foresters and land managers—company tour
- Norway: 28 forestry students—Touring research forests in US
- California Polytechnic University, San Luis Obispo—General forestry studies
- American River Community College—General forestry studies
- Santa Rosa Junior College—General forestry studies
- Western US and Canada: Meeting of State Foresters
- CDF—Forest practice enforcement training
- Local—Citizen's Advisory Committee tour of State Forest

### MANAGEMENT AND ADMINISTRATOR TOURS

- Director Wilson
- Chief Deputy Director Coleman
- Deputy Directors Anthony and Allard
- Members of the Board of Forestry
- Chiefs Newman and Driscoll

## Recreation: TWO BICYCLE RIDES AND A NATIONAL EQUESTRIAN EVENT IN 1997

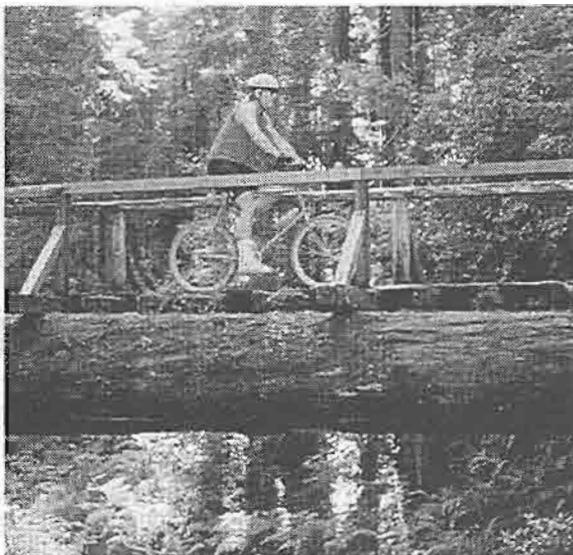
### ***THE NOYO REVENGE: May 1997*** *Mountain Bike Challenge of Champions*

The State Forest is used almost every week-end by local mountain bike enthusiasts. The harder the route, the better! These people are not likely to enter the *Tour de Skunk* (see next article), which is a very tame family ride. So, in May, a race was held by and for local mountain bicyclists, with an invitation sent to numerous mountain biking clubs in Northern California.

Several large cash prizes were offered to winners, which attracted about 60 professionals and 15 local teen amateurs, to enter the race. (The ride organizers said the cash prizes probably scared off the amateurs, although there were prizes for amateur divisions.)

The Camp One area of JDSF was the ride headquarters. There are many trail loops that start and end at Camp One. This made it easy to keep track of riders, and it was easy to create alternate race courses (fewer loops) for younger and less experienced riders. This was a good place to see all the latest in mountain bike attire and equipment, which looked somewhat less-than-new after the race.

Hungry finishers were treated to a big lunch spread after the event. They all looked as though they had been dragged on the ground for several miles. Some of the professionals commented this was one of the hardest courses they had ever experienced, but also the prettiest on trails under the redwoods.



***Bicyclist crosses log bridge at  
Camp One, where lunch is ready***

### ***TOUR DE SKUNK: Oct 1997*** *Family Ride Through the Forest*

JDSF hosts the third annual "Tour de Skunk". The "Skunk," of course, refers to the *California Western Railroad Skunk Train*, a popular train ride that carries mostly tourists, but also lumber and cargo, from Fort Bragg to Willits seven days a week.

Once a year, two flat bed cars are fitted with bicycle racks, and hundreds of tourists climb aboard for a 45-minute ride to the start of a 26-mile mountain bicycle ride through the Jackson Demonstration State Forest.

This ride traverses the State Forest, east to west, so riders pass through all types of forest management areas. Often the most desirable routes sometimes go right through active timber sales. To enhance recreational opportunities, the state forest this year added a new provision in timber sale agreements to ensure the roads are open and passable for planned recreational events.

The *Tour de Skunk* is the second event this year to benefit from the new "open roads" provision. This year, the *Tour de Skunk* attracted 316 bicyclists, an increase of 100 riders from previous years. The Mendocino Coast Recreation and Park District, which organizes the ride, provides breakfast and lunch on either end of the trip. Only the first three miles are steep, so the ride is perfect for families. This year, the youngest rider was 6, and the oldest rider was 72.

## NATIONAL CHAMPIONSHIP AND TIE RIDE At JDSF's Camp One

Horseback rides on the beach are very popular on the Mendocino Coast. This is the day job for Ricochet Ridge Ranch owner, Lari Shea, who is a renowned endurance rider of international fame. She also guides riders on treks to Australia, and annually organizes a 50-mile endurance horse ride on the Jackson Demonstration State Forest.

Lari has put on an endurance horse ride at Camp One since 1987. This year she requested special permission to put on the 1997 National Championship Ride and Tie Race, featuring the Jackson Demonstration State Forest as host.



### *Horse, rider and runner are re-united for water after the race*

What is a *ride and tie*? There are two riders and one horse. The riders alternate riding and jogging the course, with the rider overlapping the runner, tying up the horse, and jogging. The jogger finds the horse, rides past the partner, then ties up the horse, and so on, for **37.5 miles!**

On June 21st, one could find participants from around the country. Many camp with their families and horses for the week preceding the event. A local participant commented how beautiful he found the forest, how the event was well-coordinated, and how well laid out the trails were. A participant from Pennsylvania wrote to thank CDF and to comment that the event seemed to be entirely compatible with Jackson State forest activities, which incurred no interruption of logging activity.

One local logging outfit donated the watering of the base camp roads before the event, which was a blessing. This was a charitable race event: Lari Shea passed around her cowboy hat at the awards banquet, and collected over \$700, which she added to her \$500 fee, and donated over \$1200 to the local chapter of Big Brothers and Big Sisters. Everybody had a terrific weekend, and CDF received many letters of appreciation and thanks.

### Director Wilson Forms a JDSF CITIZENS ADVISORY COMMITTEE

Director Wilson formed a state forest advisory group in July. Wilson personally invited the members to serve on the committee, which includes representatives from many diverse backgrounds. The committee will be a forum for communication between the Department and the public. They have a charter; its purpose is to advise the Department on various forest management issues, during development of the new management plan for the Forest.

The committee has already met several times and attended a field tour of JDSF. The meetings have been well-attended and discussions have been both lively and informative, with many differing views expressed. This serves to illustrate the potential complexity of most issues, where it is difficult to balance the diverse viewpoints of the public with preset legal mandates and forest management policies.

Future committee meetings will cover issues related to timber management, watersheds and soils, fish and wildlife, recreation and aesthetics, and demonstration and education. The committee is authorized by the Director to continue to meet periodically until a new management plan is completed. Meetings are conducted once a month during evening hours. While committee meetings are open to the public, they are primarily intended as internal working sessions. Any inquiries on the committee should be addressed to Forest Manager Marc Jameson.

## THE STATE FOREST AS AN EDUCATIONAL INSTITUTION

### WATERSHED STUDIES FOR FOURTH GRADERS

Every year in May, seven or eight classes of fourth graders from Dana Gray Elementary School in Fort Bragg complete a 5-week *WATER ECOLOGY* program. The program culminates in a fascinating whole-day field trip to the Noyo River at JDSF's Camp One day use area.

Although the program was initially funded through a grant in 1985, the teachers liked the program so much they asked the PTA to continue it after the grant ran out. There is a set curriculum, including water conservation, the water cycle, marine mammals, ocean ecology, and the salmon life cycle.



*Children sample water at Noyo River*

There are at least two other well-known grade-school ecology programs and lesson plans available to California schools: *Project Learning Tree* has a focus on trees and plants, and *Project Wild* emphasizes animals in the environment.

This *water ecology* unit is similar but unique. It was developed by two local biologists, Pam Huntley and David Williford, who also work directly with the children twice per week. As with

*Project Learning Tree* and *Project Wild*, the teachers incorporate water ecology into all their lesson plans during the week, from math to social studies.

Until four years ago, Russian Gulch State Park was the big field trip destination. CDF Forester Tess Albin-Smith recommended Camp One for nature studies because of its proximity to the Noyo, its ability to accommodate large groups, and the new recreation and study facilities available there. The *Water Ecology* field trip moved to JDSF the very next year, and has been there ever since.

### ECOLOGICAL STAIRCASE TRAIL OCEAN TO PYGMY FOREST

The Jackson Demonstration State Forest is not simply a 50,000-acre redwood forest. JDSF incorporates a unique diversity of geological and ecological features, many of which have little to do with timber management. One of these geological features is the *Pygmy Forest Reserve*, which exists on the westernmost boundary of the forest, just south of Fort Bragg.

In 1969, The National Park Service formally recognized the *Pygmy Forest Reserve* as a *Natural Landmark* and gave a bronze plaque to JDSF to mark the event.

The area is actually an ancient ocean floor that has been uplifted. The trail begins at sea level at the Jughandle State Reserve, a popular beach on Jughandle Creek, adjacent to Highway One. The trail goes upward from the beach and under the highway, up a set of stairs, following the geological development of the "pygmy" soil. The soil is very sandy on top, but has impermeable clay layers underneath. Water ponds up (floods the trail) in the winter, and it has been a problem for hikers trying to follow the trails.

Until recently, the Reserve was simply managed for protection from motorized vehicles by installing gates and barriers next to the public roads. However, it is impossible to prevent access across the easements of every one of the adjacent homes. A system of old roads throughout the area invites joy-riding, garbage dumping, and abandoned cars and appliances. The roads are badly damaged from wet weather driving, further compounding the problem of following the trail into the Pygmy forest.

CDF shares responsibility for the Pygmy Reserve with the Department of Parks and Recreation (DPR). In 1995, an anonymous benefactor donated \$3.5 million to DPR for natural resource protection projects throughout California. DPR on the coast received \$135,000 of this money to repair the Pygmy Forest Trail, including portions of the trail on state forest lands. DPR asked for JDSF's cooperation in this project, and the two agencies worked out a plan to share maintenance and security, and to resolve any differences in recreation policies on the reserve.

JDSF and DPR worked together to clean up and repair the area. Among the many improvements made, DPR built an elevated trail and boardwalk, and CDF Parlin Fork fire crews cut and spread pygmy brush in the middle of the old roads.

Scattering the brush resulted in several improvements. It became an obstacle to traffic; it restored organic matter to the bare soil; and it reseeded the roads. There are already many tiny pygmy conifers growing in the road (!) (Previously, local biologists speculated fire was necessary to germinate the seed.)

CDF is marking the event by building a rock monument for the Natural Landmark plaque. DPR and CDF will announce a dedication ceremony in 1998. Benefits from recent repairs to the trail are far-reaching. Thousands of tourists, local residents, and students of every age will enjoy hiking and learning about the Pygmy Trail, from the ocean *all* the way up to the pygmy forest.

## JDSF HOSTS RESOURCE MANAGEMENT CAREER WORKSHOP FOR GIRL SCOUTS

The annual "Take Your Daughter To Work Day" inspired the idea of a *careers in natural resources* informational field trip on the State Forest. JDSF employs several professional women and female consultants in resource management-related fields. One of these women serves as a troop Leader for a Girl Scout troop of Cadets. On April 25<sup>th</sup>, 1997, these women conducted a "Natural Resource Career Day" Girl Scout camp-out and field trip tour.



*Cadet Troops Learn about Recreation Issues at Career Day stop in Camp 20*

The first stop of the day was at Camp 20. Here CDF forester and recreation specialist, Tess Albin-Smith, gave a brief history of the day-use recreation area. The girls were asked to solve recreation problems, from outhouses and vandalism, to building trails with wheel-chair access. The scouts were full of suggestions for improving recreation on the state forest.

## FOREST INVENTORY SYSTEMS ON JDSF *THEN and NOW*

The second stop was along JDSF Road 500, at an overview of the North Fork Caspar Creek Experimental Watershed. Here, Fay Yee began her introduction to the field of forestry, by reviewing map and compass skills. The girls were each given paper and pencil, a compass, a clinometer, a densiometer, and shown how to use these tools. The girls carefully cored a tree to calculate its age, measured the diameter of several redwoods, determined stream shade factors, and estimated heights and distances of various objects.

Next it was down into the Caspar Creek Experimental Watershed. US Forest Service hydrologist, Liz Keppeler, explained how this area serves as the site of a long-term study of logging effects on streamflow and water quality. The troops visited gauging stations and got hands-on experience measuring streamflow and sampling water, using state-of-the-art technology.

After lunch, the girls traded their hiking boots for waders and visited the Caspar Creek downstream migrant fish traps, operated by DFG. This was the highlight of the day! Americorps Watershed Steward, April Richards, explained how the traps temporarily stop young salmon on their way to the ocean. These fish are counted and measured then released, and all population data is recorded.

Wildlife biologist, Pam Town, showed the girls how to 'hoot' for the resident spotted owls. Pam said she often spends her days examining owl pellets and animal bones, which the girls squeamishly handled and tried to identify as well. The final career-day stop was at Jughandle State Reserve where State Parks ecologist, Renee Pasquinelli, led the scouts out to the ocean bluff. She explained the difference between native and exotic species, and she led a discussion of the options for managing these plant communities.

These young women were exposed to a new world of careers and to possible futures in environmental decision-making. For some, the idea of a job working in the out-of-doors gave new importance to school biology classes.

As we pass the fifty-year anniversary of Jackson Demonstration State Forest, we can look back and assess progress since taking over management of the timber resource. This subject will be covered in two newsletter articles: this first article will provide a brief overview of the history of the forest inventories, up to and including the current inventory design. A follow-up article in the next newsletter will delve further into the numerical details of the inventories.

When Caspar Lumber Company sold the land to the State of California in 1947, the company had already harvested all but approximately 6000 acres. Uncut old growth stands still remained on the extreme eastern portion of the property. The State Forest's legislative mandate was to demonstrate good, economically sound and productive forest management. Toward that end, one of the staff's first assignment was to inventory (cruise) the existing timber resource, and to develop a harvest cycle that would assure sustainable yield.

Several sources were used to develop the first "allowable cut" figure, which is a volume of timber that can be removed periodically without reducing the desired volume of growing timber. (This is comparable with removing the interest in a savings account.)

Using the best data they had at the time, the State Forest staff calculated an allowable cut of 22.5 million board-feet (mmbf) per year. This figure was intended only for use through the first management cycle (10-15 years). But data samples later confirmed the volume figure was actually pretty good (if a bit conservative), and over the years has been adjusted only slightly (now at 29.5 mmbf).

Early timber inventories were very limited in scope. Today's equipment and methods of sampling are much more sophisticated, and data from new inventories will tell us if adjustments are warranted.

Staff recognized early on, that to responsibly manage the timber resource, they must inventory and track timber growth at periodic intervals. The first forest inventory system was called Continuous Forest Inventory (CFI). It was *state of the art*. The CFI system is described in the JDSF Newsletter No. 28 (1/88).



The CFI provided an estimate of timber growth for a 5-year period on a forest-wide basis. There were only 141 plots in the sample, which represented less than 0.2% of the forest. The data showed excellent growth in the harvest areas, and it was useful for periodic reports on overall forest condition.

With the gradual evolution of forest management and forest practice regulation in California, forest staff increasingly recognized the need to improve the inventory. Forest inventory information is truly the foundation for all forest management planning. It serves as the database for prescriptive modeling and project impact assessments. JDSF needed a way to collect stand data at a much higher resolution than before.

In 1989, the forest initiated a new inventory system designed by the forest consulting firm of *Hammon, Jensen, Wallen, and Associates (HJWA)*. The design consisted of a systematic inventory system stratified by timber type. The data was collected in 1990 by *East-West Forestry Consultants*, covering approximately one percent of the forest (2,217 temporary and 306 permanent plots).

*HJWA* also developed new software for the State to compute stand and stock tables for each cover type by species. Other forest modeling tools became available in the 1980's, including *CRYPTOS* (Cooperative Redwood Yield Project Timber Output Simulator).

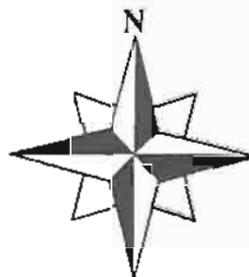
The growth simulator allows one to simulate the growth of a stand over a long period of time. One limitation of the inventory is that it does not adequately measure the hardwood component, and mixed conifer-hardwood types were not well-defined either.

Now in the late 1990's, and with a desire to do *state of the art forest management planning*, JDSF is furthering its demonstration role through the development of a Long-term Sustained Yield Plan and a Habitat Conservation Plan. A contractor was hired to write these plans.

The contractor worked with JDSF staff to collect all available resource inventory data, including locating old inventory plots and validating the old forest cover type map. A decade of timber changes had occurred, and there was still a missing hardwood/pine component. At this juncture, the contractor decided to develop an all-new cover type map, using satellite imagery, on-the-ground calibration techniques, and other state of the art techniques.

The contractor also evaluated the forest-type changes using remote sensing techniques, and recommended inventorying an additional 405 plots. Any permanent plots that no longer represented the current type coverage were deleted from the database for the new modeling effort. The result is a very large and current data set, combining recently installed plot information with the wealth of growth data on the validated old permanent plots.

The next newsletter article will cover more on the new inventory results. It will describe how the forest can more accurately project timber stand growth over the planning horizon for the sustained yield planning process.



**Logging 2nd Growth Coastal Watersheds**

***The Caspar Creek Story***

**Symposium--May 6<sup>th</sup>, 1998**

**Mendocino Community College in Ukiah, California**

*How does logging affect flooding?*

*Do harvest activities accelerate erosion?*

*How can post-logging loss of fog drip interception impact summer stream-flow?*

*Can soil nutrient capital be depleted following logging?*

*Do we need 300-foot stream-side buffer strips?*

*How is salmonid spawning and rearing habitat impacted by logging?*

**If these questions concern you, then this symposium is for you!**

Caspar Creek Watershed on the Jackson Demonstration State Forest has been the site of extensive forest hydrology research since 1962.

Next spring, researchers from US Forest Service, California Department of Forestry and Fire Protection, and University of California will present a comprehensive overview of what has been learned to date from these studies. The focus will be on the non-technical ramifications of the Caspar Creek Cumulative Effects Study, with comparisons to results from other study sites.



**Mark your calendars for this interesting and important event.**



*JDSF Newsletter Enclosed*

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