

Opening Address¹

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We're all here because we all believe there are benefits in developing and sharing our understanding of the redwood forest. Why we want to understand the forest may differ. But if we have a shared understanding of the forest, we optimize the probability of resolving competing interests.

What we value in the forest; why we value the forest and its survival may be very different.

Some of us care because we see the redwood forest as a source of extraordinary interest and inspiration. We are motivated by the majestic beauty and peace of the ancient, tallest of all living trees.

Some of us care because of forest biodiversity. Globally, forests are one of the most species rich environments on the planet. They support 65 percent of the world's taxa: more forms of life than any other land. In the face of accelerating pressures that are leading to extinction of species at a rate greater than any time since the demise of the dinosaurs, some care about forests to avert loss of biodiversity.

Some of us care because we wish to preserve and enjoy the ecological services of the forest: forests act as a filter to clean water; they decrease erosion and sedimentation they improve air quality; remove pollutants; and function as carbon sinks.

Some of us care because of the commercial value of timber from the forest.

So we may value the forest for inspiration, for its biodiversity, for its ecological services, or its commercial return. Balancing these values, resolving the conflicts arising from the differences in these values drives public policies, policies that are often reflected in regulations.

If we look at policy as the intersection of fact and values, as suggested by Nate Stephenson of the USGS, we can appreciate the pivotal role of developing a broader and deeper shared scientific understanding of the forest. As the facts become clearer and we share an understanding of what the facts are, we gain a critical tool in developing policies that accommodate and resolve competing values.

The existence of the ancient redwood forest in the north coast of California today is the direct result of a policy dating back to 1918 developed by leading scientists who recognized the unparalleled nature of the ancient redwood forest and the undisputed fact that they were at imminent risk of elimination. They acted. They built a shared understanding of the value of the forest and marshaled the necessary resources for success.

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It's an interesting story. In 1917, three old friends, scientists and conservationists who shared a keen interest in evolution, found themselves together in a gathering in the redwoods west of Santa Rosa. Recognizing a shared intrigue with reports of the ancient redwoods to the north, they undertook an expedition to explore the region recently opened up with the construction of the new State highway. John C. Merriam, Professor of paleontology and Dean of the Faculties at the University of California in Berkeley, Madison Grant, chairman of the New York Zoological Society, and Henry Fairfield Osborn, president of the American Museum of Natural History, traveled north to explore the fabled forest of immense redwoods, and encountered a landscape littered with fallen giants. For mile after mile, they found forests felled at an unprecedented rate, possible because of the highway and developing technology. Trucks had replaced oxen teams, hauling logs from the forest to the mill faster than ever before. Mills worked more and more efficiently, turning logs into lumber. The post World War I market demands and mechanization were laying waste to a forest that had stood for as long as two thousand years.

Imagine then, arriving on the banks of the South Fork of the Eel River where Bull Creek emerges from its stately meander to join the Eel river. Imagine Merriam, Grant and Osborn, stopping, getting out of their car, and walking into the forest, standing at the foot of those massive trees and looking upward, unable to see the tops that towered higher above ground than any other tree in the world. Imagine the profound quiet of the forest.

Today we don't have to imagine what they saw and the quiet they heard because they translated the awe they felt into resolve to save that forest for all time. They realized that no group, public or private, was working actively to preserve the ancient redwoods of the North Coast. On returning to San Francisco, they started Save-the-Redwoods League, dedicated to rescuing from destruction representative examples of our forest primeval.

At that time, there was no State Park system and the National Park system had only recently been created. The only National Parks were formed by Congressional designation of publicly-owned lands that had never been granted to private land owners or with lands that were donated by individuals. Congress was not appropriating money to purchase park lands. In the redwood region, virtually all of the forest land had been homesteaded or granted and were owned by individuals and timber companies, large and small.

In order to rescue the ancient redwoods from destruction, the League recognized it would be necessary to create momentum for the purchase of redwood groves with private resources.

In August of 1919 two of the League's founders again traveled north to Bull Creek and then to Eureka. By the end of their trip, the Chamber of Commerce had resolved to halt logging along the highway and the newly established League had pledged \$30,000 to buy the first redwoods for permanent protection provided that the County of Humboldt match that gift. Within weeks the County matched the gift and redwood conservation in the North Coast had begun.

Again several years later, Humboldt County's Supervisors played a key role. The League had been urging the County to act to acquire the majestic ancient forest of Bull Creek and Dyerville Flats. Pacific Lumber Company had patiently deferred harvest for five years, but would delay no longer. In the heat of contentious public hearings representatives of the League came into the chambers with a telegram

announcing an anonymous donation of one million dollars, secured in strictest confidence from John D. Rockefeller Jr. The momentum shifted and the vote to save that incomparable forest passed. Clear, irrefutable facts combined with community values to create policy and inspire action.

In the years since, the League has been instrumental in purchasing more than 165,000 acres of forest lands: more than six of every 10 acres in California's redwood state parks.

For 86 years, the decision about where and how to focus the conservation priorities of the redwood forest has been based on extensive surveys and studies. The League's early leaders recognized that improving our understanding of the redwood forests would be critical to effectively rescuing them from destruction. One of the League's long-standing objectives is:

To foster and encourage a better and more general understanding of the value of primeval Redwood or Sequoia and other forests of America as natural objects of extraordinary interest to present and future generations.

The League has long recognized that rescuing the redwood forest primeval from destruction requires more than a fringe of spectacular ancient trees along the traveled highways. Watershed level protection and linkages among core reserves on a landscape-scale have become axiomatic elements of successful conservation. But in the redwood region, many questions remain unanswered. Uncertainties are heightened by global impacts such as climate change, particularly critical in affecting the moisture regimes so pivotal to the health of the world's tallest trees.

In 2000, through Island Press, the League published a book edited by Reed Noss called *The Redwood Forest*. It is a compilation of contributions from some 33 scientists with expertise in the coast redwoods. This book sets the stage for prioritizing the League's work in the coast redwood region. The book includes a focal area model that spatially applies nine ecological criteria to identify the watersheds in the coast redwood range with the highest probability of contributing to the long term survival of the redwoods. Building on that framework, the League is now engaged in a finer scale assessment of conservation opportunities throughout the redwood's two million acre range. In the course of completing the "master plan," questions arise continuously about the design and adequacy of the conservation strategy.

The League also continues to sponsor research through a relatively modest grant program. Several of the papers being presented in this symposium are the results of League-funded studies over the last few years. And we are pleased to announce that we have established research fellowships at Humboldt State University and Cal Poly to support graduate student research with a focus on ancient redwoods.

Today, as we evaluate the effectiveness of the League's actions to save the redwoods many questions of pivotal importance remain. Only four or five percent of the original ancient forest remains. If the redwood forest of the future is to be anchored by ancient trees, we have no margin for error. We need credible solid answers to pressing questions:

1. Are the reserves that are now protected adequate to sustain themselves? Are they large enough? Are they linked appropriately?

2. Is the design of these core reserves adequate to withstand the global changes that we are beginning to experience and that lie ahead? In these tallest of all trees, is the prospect of temperature increase likely to affect the moisture regime, so critical to the health and survival of these trees?
3. Do the reserves represent adequately the range of genetic diversity and species mix of the ecosystem?
4. What role does the second growth forest need to play to ensure the survival of the forest as a functioning unit?
5. What is the essential nature of the old growth forest: its processes and constituent elements, and what does it contribute to the health of the redwood forest as a whole?
6. As we recognize the probability that the ancient redwood forest needs more to survive, what is the role of the surrounding, connecting second growth forest?

I am sure that everyone in this room has other pressing questions.

With the ancient forest, there is no going back. Once the two thousand year old tree is cut it is gone. Once the 800 year old stand is fragmented, it can not be recreated. With time, new stands of big trees can be developed, but the ancient forest can never be re-created. It is not a renewable resource. We need policies guiding the use of the forest that are based on solid science, credible facts.

There is widespread recognition of the importance of facts, of good science, as the key element that drives policies that inspire confidence rather than contention. So long as facts are developed with integrity, free of values; free of distortion that can occur where inquiry is undertaken to rationalize a pre-conceived desired outcome, so long as science is sound, its contribution to policy is invaluable. The moment we allow the desired outcome to drive scientific inquiry, even to shape the form of the hypothesis that is studied, we risk obfuscation and distortion; we risk losing the luminous clarity and consensus that science can bring. There are widespread claims that policy decisions are based on science in an effort to inspire public confidence. Sometimes the claim is that the “best available science” supports underlies the policy. Other times it is “sound science.”

The overwhelming importance of value-free science in today’s world recently prompted more than 60 well-respected scientists to decry the extent to which this country’s political agenda is infecting scientific inquiry. Instead of objective, credible scientific facts being the basis of policy, the facts themselves are being distorted by political values in order to justify policy.

For us at the League, the integrity of scientific inquiry is an issue of overwhelming concern and importance. Not only do we need to measure the success of our work in saving the redwoods based on sound, credible facts about the redwood forest, we need the clarity of sound credible science to guide action as we seek to restore second growth forests to complement and ultimately to function as part of the new “old forests” of the future.

Nearly two years ago, the League spearheaded the purchase of the 25,000-acre Mill Creek tract formerly owned by Stimson Lumber Company. In spite of its intensive industrial management in even-aged units, the property’s strategic location linking two premier ancient redwood parks and linking the inland forest to the Pacific

Coast, together with its importance as a coho salmon refugium, made purchase a compelling opportunity. Virtually the entire watershed is now in public ownership.

There could hardly be an acquisition more distinct on the surface from the League's earliest purchase and protection of the ancient trees of Rockefeller Forest. And without question, the challenges of management are profoundly different. The League, other state funding agencies and the County are actively involved in consultation with the Department of Parks in restoration at Mill Creek. Funded by a grant to the League from the Bella Vista Foundation, working with Professor Kevin O'Hara, his graduate student, and a consulting forester, Parks has completed an initial thinning experiment in young stands designed to accelerate development of old forest characteristics. With no more than four or five percent of the ancient forest remaining, the commitment to growing more big trees and restoring forest complexity is an essential tool in permanently saving the redwoods.

As we look to the long term challenges of restoration, the opportunity to learn appears boundless. The uncertainties are magnified as we try to define appropriate human intervention to convert the industrial even-aged legacy of timber operations to the complexity of an ancient forest with fully functioning natural processes that support diverse flora and fauna. We are excited by the opportunity to collaborate, to help focus a restoration network through work at Mill Creek.

When we look today at the progress in saving the redwoods, we recognize there is much to be done and much to be learned. Critical questions must be answered: how large does a stand need to be to support the natural processes of the forest, what impact will global climate change have on the viability of the redwood forest? How do we protect the habitat within the forest of the microscopic arthropods that comprise part of the forest diversity? How important are the unidentified species of the forest to the forest's long term survival?

The questions go on and on. Some of them will be addressed in this symposium. Many have not yet even been posed with sufficient clarity to generate the hypotheses that will advance our understanding. A deeper understanding will surely inform our strategies and good public policies that balance values based on a common understanding of facts developed with scientific integrity. Whether we care about the forest for its timber value, the biodiversity it supports, the ecological services it produces or the inspiration and peace it brings, we all wish to promote the survival and health of the redwood forest.

E.O. Wilson said, "In order to care deeply about something, it is first necessary to know it." The League is happy to join all of you in these two days to develop a broader and more general understanding of the redwood forest, to know it better.