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TREES OF THE PACIFIC NORTHWEST: A WEB-BASED APPROACH TO FORESTRY EDUCATION

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ABSTRACT: Tree identification is a powerful vehicle for introducing people of varying ages and backgrounds to natural resources. For some it's a rewarding and delightful end in itself; for others it provides an important first step into the issues and practices of natural resource management. For most, it's an empowering skill they can share with others. For many, it's a black-box process, filled with obscure terms, uncertain choices, and hidden characteristics.

Traditionally, books and individual experts have been the primary sources of information on tree identification, and they have filled that niche well. But for the next generation of learners, that niche will be shared with CD-ROMS and World Wide Web (WWW or Web) sites. With that in mind, and on the heels of an immensely popular revision of a regional text called *Trees To Know in Oregon*, we embarked on an effort to extend the process of tree identification to the Web-oriented people of Oregon, and beyond.

Since conifers often present the most difficult identification challenge in the Pacific Northwest, we decided to start there—by making a web-based version of the conifer key in *Trees To Know in Oregon*. Our basic idea was to combine the visual imagery and interactivity made possible by the Web with the tried-and-true structure of the book.

Our first step was to develop goals and identify audiences for our site. Audiences include college and university students (at Oregon State and elsewhere), elementary and secondary educators and students, natural resource professionals who need a quick reference, and anyone else interested in tree identification—in short, almost everyone. As a result, we needed a design that was technically accurate, yet easy to use; one that would provide details for sophisticated users, but be simple enough for novices; one that relied more heavily on photographs and drawings than on vocabulary and jargon.

Our goals were to provide:

- *Descriptions and photographs of common conifers found in the Pacific Northwest. We emphasized native species, but included a few common ornamentals, too. This feature permits users who know what information they want to access it directly.
- *An interactive decision-making key that would permit users to identify specimens with which they were unfamiliar. This allows users to sit at their computer, branch sample in hand, and figure out what they're looking at.
- *A "quiz" that would permit users without actual specimens to test their knowledge of Northwest conifers.
- *A link to additional information on tree identification. Our primary link is to *Trees To Know in Oregon*, the book that gave rise to the Web site. Ordering information is included in the site.

Next, we built a hierarchy of pages for 3 major sections, corresponding to our first 3 goals. This structure allows users with different needs to approach the site in different ways and find the information they desire. The site was designed to have discrete, but linked, categories that allow users to access information in a variety of ways. The site takes advantage of the asynchronous nature of the Web, yet provides a clear and understandable framework within which to navigate.

One important feature of the site, and central to its interactivity, is a pictorial dichotomous key. This key, identical to the one in *Trees to Know in Oregon*, takes on a life of its own on the Web. The user is able to click on a series of choices, and find the genus,

and eventually the species, of their specimen. No technical terms to struggle with, and no pages to flip through; within minutes they have arrived at colored photographs with detailed characteristics and descriptions.

The ability to access detailed, color photographs is also key to the site's success, and utilizes one of the Web's greatest strengths. Photographs that would be too costly to include in a printed document are abundant in the Web site. The photographs show detailed characteristics important to tree identification (e.g. bracts on cones), which would be difficult to explain in words, and difficult to decipher in black-and-white.

A Mystery Tree section comprises a third key feature of the site. Essentially, it is a quiz that provides users with an unnamed picture of a tree, directs the user to the pictorial key, and provides an answer when finished.

Paramount to the success of the site was the collaborative nature of the development team. In addition to the Web designer and the content specialist, a technical specialist and graphic artist provided essential support. The content specialist provided the information on the trees as well as input on instructional design strategies; the graphic artist created graphics that supported the goals of the Web site and generated a user-friendly environment; the technical specialist provided a reality check about what was technically feasible, and helped figure out ways of achieving various desired effects; and the Web designer served as a bridge among all, and created the site.

Lessons learned from this project include:

- *Web sites have the potential to be powerful educational tools. But to reach this potential, designers must understand and take advantage of the opportunities inherent in the medium.
- *Innovative and effective Web sites are most likely to result from teamwork: content experts, instructional designers, computer specialists, Web designers, and graphic artists working together toward a common goal.
- *Nothing about Web site construction is easy or inexpensive. As in everything, quality demands effort and resources.
- *With good design, a single site can serve multiple audiences and purposes.
- *Interesting Web sites will attract attention far beyond what you anticipate—and may require additional attention in return. The first day our site was posted, we received e-mail from across the United States asking when we planned to produce sites for their parts of the country. We receive on a weekly basis requests from young people around the world asking for additional information about trees and forests of the Pacific Northwest, or from their countries. We receive numerous requests to link with other sites, and from others who would like to help us expand our site by including species of importance to them. And we receive far too many requests from home gardeners who want us to identify a particular specimen! Responding to these requests is time-consuming, but they are difficult to ignore.

Trees of the Pacific Northwest may be accessed at (<http://www.orst.edu/instruct/for241>).