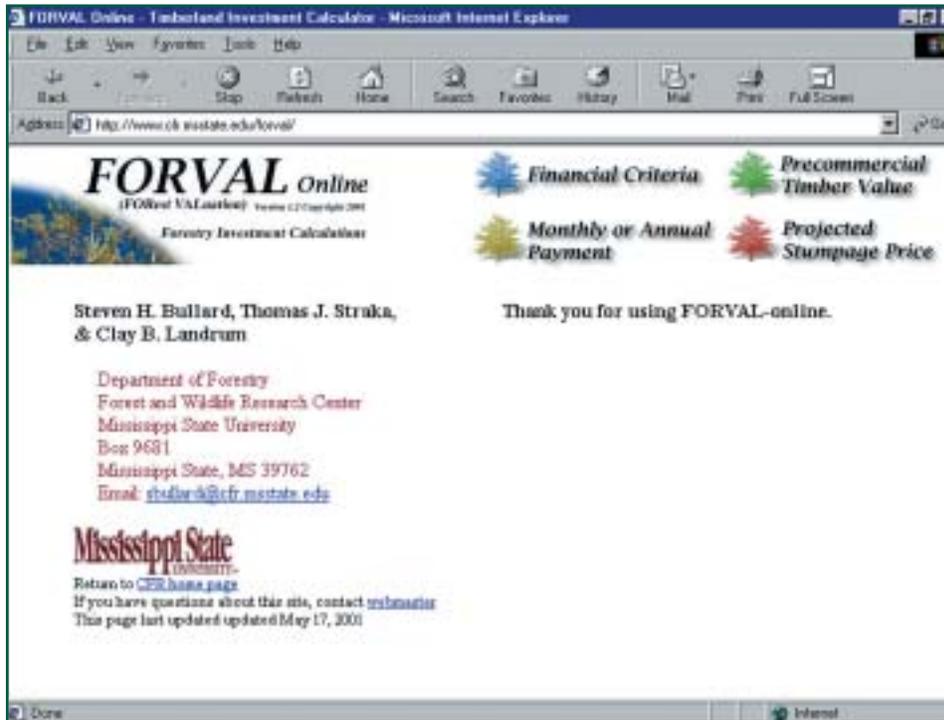


FORVAL-Online: A Web-based Forestry Investment Tool



INTRODUCTION

The internet is changing how business is conducted and information is presented. Less than five years ago, the World Wide Web was an emerging medium used to disseminate information. Recently, the World Wide Web has increasingly become an interactive information source. The introduction of client-side scripting languages such as JavaScript allows web pages to react to user actions and display user-specific content. In the field of forest economics, a useful attribute of JavaScript is the ability to quickly and accurately perform complex calculations without having to access a server-side computer program. The World Wide Web, coupled with the quantitative potential of JavaScript presents itself as an ideal medium

for publicly available internet-based forestry investment analysis tools.

"FORVAL-online: A Web-based Forestry Investment Tool" is designed to help educate and interest non-industrial private forest landowners in reforestation and forestry investments through the use of internet technology. The project also supplies professional foresters with an accurate, easy to use, and readily available forestry investment analysis package. Specifically, FORVAL-online will accept user input and perform calculations in the following areas: financial criteria, monthly payments, annual payments, precommercial timber value, and projected stumpage price.



"The World Wide Web is definitely changing the ways people obtain information. It is extremely important that the forestry industry does not fall behind in this arena."



SYSTEM DEVELOPMENT

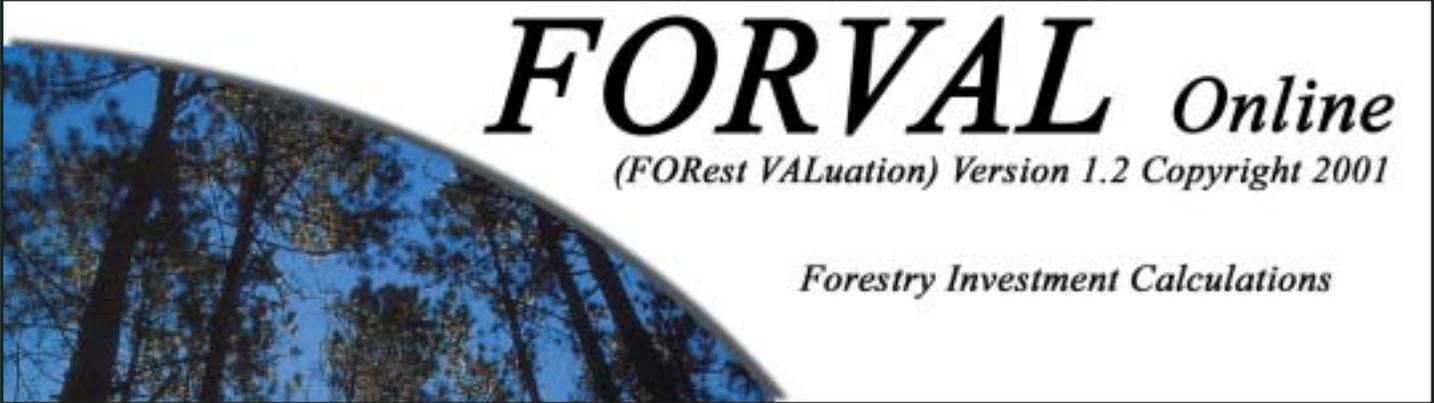
The proposed Web-based forestry investment analysis software package will be used by both non-industrial, private forest landowners, and forestry professionals. The system, therefore, should be easy to access and use, and it should provide useful information. To accomplish these goals, explicitly stating the system's functional requirements is a necessity. System requirement categories include user interface, processing, storage, and control components.

From a user's standpoint, the most important aspect of a computer program is the graphical user interface (GUI). The GUI allows the user to communicate with the functions and procedures that perform the necessary calculations, given the users' input. Considering that this forestry investment analysis calculator is being developed to run over the World Wide Web, several user interface problems present themselves. First, the use of standard HTML pages prevents the user from adding an undefined number of cost and revenue streams. Second, the use of standard HTML pages makes it difficult for the user to know if the data entered is actually being recognized by the system. The logical solution to these problems is to incorporate frames into the HTML document.

Frames allow the user to have several different HTML documents visible within a single browser window and thus lend themselves quite well to applications where part of the displayed information is subject to change while other information must remain the same. FORVAL-online, for example, will incorporate the use of three frames, one for navigation, one for a user interface, and one for results and other dynamic content. Once the individual frames have been defined, JavaScript can be used to access and manipulate each frame.

FORVAL-online's graphical user interface is extremely simple and to the point. There are no complex explanations of how to use the program; it is assumed that the user has some knowledge of forest valuation concepts. The intuitive design of the program and its user interfaces are sufficient for typical operation. References will be available to users seeking more information on forest economics concepts and examples. FORVAL-online is available at the following url:

<http://www.cfr.msstate.edu/forval>



FORVAL Online

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Forestry Investment Calculations

User Interface Requirements:

- Main interface should be graphically appealing and incorporate textboxes and submit buttons that web users are familiar with.
- Users should see a data summary as data is entered.

Processing Requirements:

- Given a series of cost and revenue streams, the system should be able to quickly and accurately calculate the following financial criteria:
 - * Internal Rate of Return;
 - * Net Present Value;
 - * Benefit/Cost Ratio;
 - * Equivalent Annual Income;
 - * Land Expectation Value;
 - * Net Future Value;
- Given past and predicted costs and revenues, the system should be able to quickly and accurately calculate the current dollar value of a premerchtable stand of timber.
- Given current stumpage prices and a reasonable annual rate of change, the system should be able to quickly and accurately calculate future stumpage prices.
- The system should be able to quickly and accurately calculate monthly or annual payments to either repay a loan or accumulate a future sum at a given interest rate. The system should optionally generate an amortization schedule when repaying a loan.

Storage Requirements:

- The system should store user input within the browser until the reset command is given.
- Hard disk storage is not required.

Control Requirements:

- The system should alert the user for data entry errors.
- The system should generate easy-to-read printouts.

SUMMARY AND CONCLUSIONS

FORVAL-online provides an extraordinary Web-based forestry investment analysis calculator to landowners and forestry professionals. Internet availability eliminates the need of a software distributor; this advantage saves time by allowing users to have access, on demand, to a quick and reliable forestry investment analysis package. Although FORVAL-online is an internet application, the actual processing takes place within the user's browser; this permits users to load sections of the program into their browser and continue using the program without being connected to the internet.

FORVAL-online calculates forestry decision-making criteria given cost and revenue information; entering accurate cost and revenue information is crucial. Site variety, coupled with the diversity of timberland managers and landowners, makes forestry investments extremely difficult to generalize. When a user enters cost and revenue information into FORVAL-online, taxes, inflation, risk, and discount rate must be considered and incorporated into the cost and revenue information. Failure to address consistency in these external calculations can drastically affect the outcome and accuracy of an investment analysis.

Over the past decade, timber val-

ues have experienced unprecedented price appreciation, and society is beginning to see timberland for what it is - a valuable capital asset that must be managed properly. Timberlands, however, cannot be subject to an "across the board" management regime. Different sites possess different productive constraints, and the same holds true for landowners and their management goals. Considering the diversity of managers' and landowners' analysis needs, FORVAL-online allows users to consider their own unique situations when entering cost and revenue information.

The World Wide Web is definitely changing the way people obtain information. An easily accessible, graphic-oriented network of computers linked together to provide users with virtually any type of desired information is an increasingly powerful information tool. It is extremely important that the forestry industry does not fall behind in this arena. Web-based forestry applications such as FORVAL-online serve as an important step in keeping forest landowners and investors abreast of newly developing internet technologies. Applications of these technologies are crucial to business development and are destined to reshape any industry that chooses to take advantage of their potential.

This *Research Advance* was based upon the following master's of science thesis: Landrum, C.B. 2001. FORVAL-Online. M.S. Thesis, Department of Forestry, Mississippi State University.

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