

A model for interfacing with FHM data for estimating fire-related characteristics

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Introduction:

The USDA Forest Service has begun implementation of a new annual forest inventory system that will eventually be operating in all 50 states. The majority of users will require an interface to the data with some built-in analysis capabilities to obtain the detailed information users need to plan for rehabilitation and fuel reduction.

We are developing a web-based model that will allow any user to produce inventory-based fire-related estimates for their zone of interest, such as a National Forest, large watershed, or area surrounding a community, by accessing the model through their web-browser. In this first year of the study, the graphical interface that allows users to choose their region of interest is being developed. This poster describes the COLE (Carbon On-line Estimation) model results to date.



Figure 1: The state selection screen

Methods:

- ◆ COLE is being built using data from three individual States as test cases: Maine, Minnesota, and Georgia. This should ensure model will work for all states.
- ◆ The calculations will include relationships between the Phase 2 and Phase 3 (FHM) data.
- ◆ The model is written in JAVA with MySQL as the database engine. The advantages of using JAVA and MySQL are that these tools are platform-independent, are freely available, efficient, and highly reliable.
- ◆ Completed model code will be available as open source code.
- ◆ Model is being designed to minimize response time to the user's requests.

Interface:

The program first shows a map of the US on the user's screen (Figure 1), and asks the users to choose a State. For model development, this study focuses on Maine, Minnesota, and Georgia. Figure 2 illustrates the state-level map, with options available to the user. The basic map shows only county boundaries; other layers are available

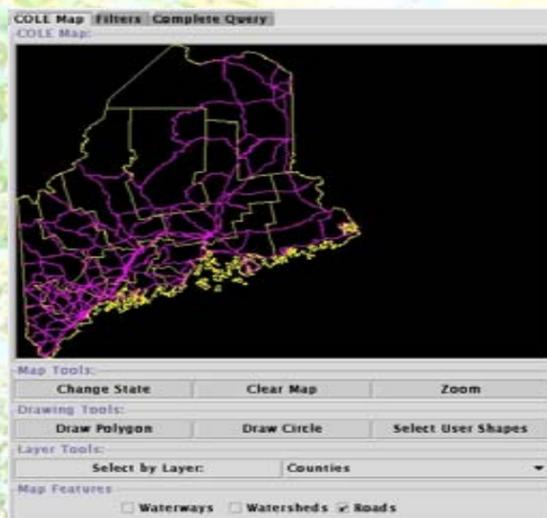


Figure 2: The state map, with roads layer

The user can choose to select one or more counties (Figure 3a), a circular area (Figure 3b), or design a polygon (Figure 3c) to define the area of forest for which they want information.



Figure 3a: Selecting by county



Figure 3b: A user defined circle

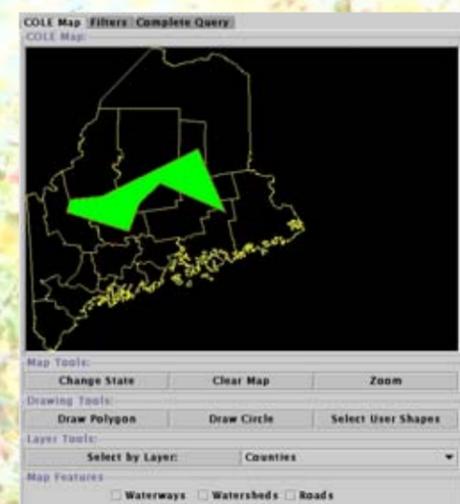


Figure 3c: A user defined polygon
When finished the user highlights the area, and clicks on the tab for filters.

Filters:

The user is given choices of how they would like to see the information categorized (Figure 4). When completed the user clicks on the last tab to answer questions about variables and output type of interest.



Figure 4: The filters screen

Variables and Output:

The user chooses the characteristics of interest. In the future, these include fuels loading information about fine and coarse down dead wood, and stand structure. The user then submits the request. Several choices will be available for the format of the results after query completion.

Future plans:

(1) By May, 2002, a basic working version of the model will be available. This will include complete on-line documentation. With continued funding, the model should be completed May, 2004.

For a preview of our work, see <http://ncasi.uml.edu/projects/FIA/porpGis/index.html>

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