Forest €¢onometri¢$

Forest Resource Analysis System Software (FRASS) is a reliable and efficient lands management system for scheduling economically optimal forest management activities while also discovering the value of timberland properties – one timber stand at a time. FRASS assembles growth data for forestland parcels, combines it with detailed information about the property, and engages delivered log market data predictions to give financially optimal timber harvest rotation dates and values into the future.

The FRASS program combines advanced econometric tools with our client's specific data on parcel ownership, timber inventory data, timber stand data, riparian protection zones, road networks, and more, to generate the **Highest and Best Use** value for timber production of the parcel. These are incorporated into the FRASS program for fast, secure, and accurate valuation reports for targeted parcels.

Optimal timber stand harvest timing for the current rotation, the next rotation, and future rotations into perpetuity are projected in the FRASS program. These are made possible by combining tree growth projections, cost and revenue forecasts, Real Price Appreciation forces, and other factors into an optimization solution for the landowner.

High levels of online security are implemented to protect data and limit site access to only authorized personnel.

FRASS is more than a parcel valuation tool. It is a land management apparatus.

Forest Resource Analysis System Software (FRASS)

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Forest Resource Analysis System Software (FRASS)

Forest Resource Management Econometric Tools

Maximizing Long-Term Financial Returns from Forestland Investments

FRASS.Forest-Econometrics.com

Forest Resource Analysis System Software

The Forest Resource Analysis System Software (FRASS) is a reliable and efficient lands management system for scheduling economically optimal forest management activities while also valuing discrete timberland properties. FRASS has been designed to integrate factors of timber species, size, growth, density, and response to management with data on soils productivity, riparian protection for riverine species, bird species, and zoning regulations. These physical site conditions are combined with monthly updated market economic data to provide users with predictions of value and management activities consistent with optimal economic decision making tools. At the same time, it provides users a reliable system of predicting the probable sales price of parcels based on timber production as the **Highest and Best Use**.

FRASS focuses on parcels, composed of timber stands, roads, rivers, and other physical components of the land and its resources. The holders of these lands may be commercial timber companies, non-industrial private forestland owners, federal or state agencies, Trust owners, or Indian tribes. Users of the software include consulting foresters, forestland managers, and professional land appraisers. The process of determining the site's intrinsic value in response to site factors and the economic profile of the region, and the country, is part of the value estimation process. FRASS provides users with tools used in making land management decisions.

FRASS summarizes market price data using commodity specific Real Price Appreciation, Net Present Value (NPV) and the Soil Expectation Value (SEV), based on the site's ability to grow marketable timber on the parcel. The land's ability to grow timber species into perpetuity helps to define the parcel's intrinsic value.

FRASS reports the Bare Land Value, total Parcel Value, individual stand value, reforestation costs, road maintenance costs, and more.

The value of the forest comes from the combination of tree growth with economic factors.

Users have exclusive access to their data over a series of security protocols controlling access with site passwords, user authorization, secure socket layers, and access monitoring.

Forest Resource Analysis System Software (FRASS)

Forest growth is combined with site conditions and economic factors to generate optimal harvest date solutions for each timber stand.

The Forest Resource Analysis System Software (FRASS) is an internet accessible Software-as-a-Service (SaaS) program identifying financially optimal timber harvest rotation lengths on forested parcels. This **Highest and Best Use** solution gives the landowner and manager the Income Capitalization value used in Land Appraisals. FRASS details how to realize this value with harvest timing for each timber stand.

In order to generate this value, the FRASS program collects over 200 independent variables to apply to each timber stand on each parcel. Data used in value projection uses forest growth modeling results in 5-year intervals, sort tables by species, logging costs, hauling costs, overhead and administration costs, profit and risk factors. Past market performance by sort and species, and reforestation costs are combined with physical site characteristics such as slope, elevation, property zoning, riparian zone protection, threatened, endangered, or sensitive species habitat protection, and more. These factors are analyzed for each timber stand on a parcel, then combined in "current dollar terms" (Net Present Value) to identify the financially optimal parcel value.

This holistic solution to forest management decision making combines these data into parcel reports. FRASS users identify parcels to be analyzed, the factors of inflation, and other data for the analysis. FRASS then conducts parcel evaluation considering all timber stands independently on the parcel, combining them into an all-inclusive parcel report.

Starting FRASS

FRASS information includes a robust data set combined with macro-economic and micro-economic factors to generate user specific market portfolios determining optimal timber harvest dates into perpetuity. We have defined the working set of economic input variables for users to apply to their forestlands. The FRASS user provides forest inventory data processed through forest growth modeling software applications to make these solutions possible. ***The FRASS program builds on data already accumulated by the forestland owner giving it increased significance.***

Maintaining Operational Data

The FRASS program takes advantage of Geospatial data (GIS data) for many of the site specific input variables. These data include:

1. slope and elevation,
2. soil survey data,
3. property cadastral data,
4. stream riparian protection zones, and
5. road networks including needs for new roads, road improvements, surface improvements, maintenance, and use fees during timber harvest activities.

These data become part of the optimal cost-flow structure used in parcel valuation. They are periodically updated as needed to maintain the cost-analysis flow of optimal harvest rotation calculations for each timber stand, on each parcel.

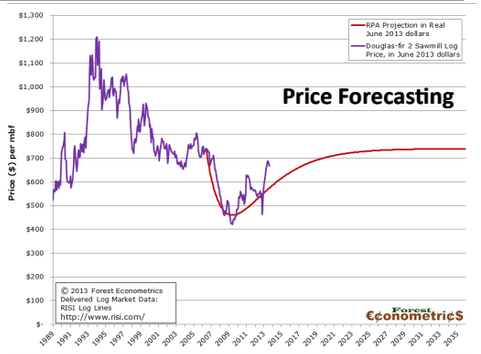
Economics of FRASS

FRASS integrates several well-established economic valuation procedures to give users a recognizable and reliable economic valuation portfolio. These well-established procedures are combined with innovative and insightful economic valuation techniques to better predict the economic impact of land management decisions.

One of these tools is the development of the **Real Price Appreciation** formula giving FRASS users the ability to "replicate" the economic conditions of the past from inflation and historic nominal sort prices to see how "real prices have increased or decreased" in delivered log markets. Users can design unique economic portfolios to apply to their forecasts, which is used to make time-constrained projections of sort prices for timber products, by species and sort. This **Real Price Appreciation** formula is being presented as one of the most innovative forest economic advances of our time, developed specifically for FRASS users.

Forest growth is modeled over multiple rotations to generate the highest Net Present Value solution of each parcel.

FRASS maintains monthly economic data reaching back in time over 100 years. These data are paired with monthly historic delivered log prices in each log marketing area. This combination gives FRASS users economic insights to use in forest management decision making.



FRASS Users

FRASS is beneficial for forest industry landowners, federal and state agencies, Indian reservations and Indian tribes, universities, conservation organizations, professional land appraisers, and forest consultants serving their clients. FRASS is designed for the landowner and manager with one, dozens, hundreds, thousands, or more parcels, and potentially hundreds of thousands, or more timber stands. FRASS conveys detailed information with optimized financial harvest solutions for investment returns.

FRASS generated insights can be used for parcel valuation purposes (buying or selling), managing public resources (publically traded companies or delegated Trust obligations), and to convey information to decision makers and stakeholders alike. ***Using FRASS, you can discover how to realize financially optimal returns on your investment.***

Contact us to explore how your FRASS experience can begin with data creation, staff training, and secure connections generating solutions ready for your discovery!

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