Coastal Landscape Analysis Modeling Study (CLAMS) Simulation Modeling System

Coastal Landscape Analysis and Modeling Study; College of Forestry, Oregon State University; USDA Forest Service, Pacific Northwest Research Station, Corvallis, OR; Oregon Department of Forestry

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Inputs

Tree-level data organized in vegetation class strata.

Existing stand structures

How the four major landowner groups (federal, state, forest industry, non-industrial private) manage their forests now, and plan to manage them into the future.

Management Intentions

Log prices; regeneration, costs, pre-commercial thinning costs, thinning and clearcut logging costs, etc.

Prices and costs

Several GIS coverages are used to develop input data for the simulation model, including: vegetation from a classified satellite image, harvest units, watershed boundaries, streams, and land allocations. These were developed over time from a variety of sources, and using both raster and vector data structures.

GIS data

An assessment of forest and non-forest management areas was developed within the College of Forestry at Oregon State University, a GIS layer was the resulting product. Non-forest management land is excluded from the modeling process. In addition, CLAMS researchers are working on a spatial model to predict land use changes over time.

Land-use change

Land-use pattern

Policy guidance

ORGANON and, ZELIG were used to grow forest stands into the future. Management (e.g., thinnings) was applied where appropriate for the management prescription being modeled.

Stand structure projections over time

LAMPS Simulation Model

LAMPS Schedules management activities over a 100-year planning horizon (20 5-year periods).

State Forest Practices Act sets the maximum clearcut size at 120 acres. On forest industry land we aggregate harvest units up to this size. In addition, we attempt to develop a distribution of clearcut patch sizes that emulates a recent (1990-1995) estimate of clearcut patch size distribution in the Coast Range.

Tools and data for policy analysis

Response Models

Commodity production data

Softwood and hardwood timber harvest volume, by owner class, over time, is reported, as is the number of acres treated, costs for regeneration, PCT, and thinning, and revenues from harvests. In addition, other socio-economic impacts (e.g. employment) are being estimated from the simulation results.

Outputs

Habitat condition for focal species

Successional stages

Aquatic habitat / watershed potential

Recreation opportunities

Employment and income

Landslide / debris flow

Synthesis of effects of alternative management scenarios

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