

Attachment G Model Rules

Rule	Description	Impact on model outputs
Policy direction from April 22nd Memo - Applied to October 19th Subcom Meeting		
Stand management	Management activities allowed in the production-emphasis area include moderate intensity commercial thins and regeneration harvest. Within the conservation emphasis area, some stands can be thinned (including stands within northern spotted owl circles and in marbled murrelet management area buffers).	High
Young stand management	Young stand management includes several components, including planting, site prep, vegetation management, and precommercial thinning (PCT). Young stand management is implemented following a regeneration harvest within the production emphasis area to promote tree growth. Planting densities are between 350-450 trees per acre. Tree species selection are based on site. Site prep and vegetation management includes mechanical and aerial treatments. PCT is implemented in the model for stands between 10-20 years of age, and thins stands to 200 trees per acre. The model implements PCT for a subset (not all) stands in the production emphasis area.	High
Current FMP Stream buffers	No harvest (regeneration or thin) in riparian buffers.	Medium-High, depending on buffer width
Scale of Planning Unit	Six Districts (Astoria, Forest Grove, Tillamook, West Oregon, Western Lane, North Cascade) are simulated simultaneously to allow local variations while reaching targets across the planning area.	Medium
Minimum Value requirement	For a stand in the production-emphasis zone to be eligible for a regeneration harvest, it must exceed a minimum value (\$/acre) requirement. This rule does not apply to Precommercial Thinning (PCT) entries. There is an exception to this rule: if the harvest scheduler determines that there is a long-term benefit to sustainable-harvest, it may harvest a unit in the short term at a loss. An example of this might be a 'rehab' stand, which if harvested now might incur a loss, but would achieve a gain in the long-term.	Medium
Minimum regeneration harvest age	There is a minimum stand age requirement of 50 years for all stands before regeneration harvest is allowed.	Medium
FPA rules for upland areas, including Green Tree Retention (GTR) requirements for FPA	Number of residual green trees on a unit following a regeneration harvest is currently set at 2 green trees per acre to follow FPA legacy structure request.	Low
No harvest on old-growth stands	<ul style="list-style-type: none"> Regeneration/thinning activities are not allowed in patches spatially defined by ODF staff as old growth. Old growth is defined by the 2010 NWO State Forest Management Plan (p. 4-18) as "older forests occurring on western hemlock, mixed conifer, or mixed evergreen sites that differ significantly from younger forests in structure, ecological function, and species composition. Old growth characteristics begin to appear in unmanaged forests at 175-250 years of age." 	Low
Technical Rule used by ODF Staff to implement model		
Growth and yield implementation	Tree growth is projected using the Forest Vegetation Simulator (PN and WC variant). A number of growth calibrations have been applied to better represent expected growth. Calibration is implemented at a district level with field staff input. There are alarge number of assumptions that go into growth and yield modeling.	High
Initial inventory	Trees are grown from their measured date to the present year (2015) to estimate the initial inventory for Patchworks	High
Pond values	Pond value projections are estimated by using a 10 year historical average of log values.	High
Stumpage Revenue	Stumpage is currently estimated as pond value - logging cost - transport cost (including project work). District-specific adjustment factors are applied to stumpage outputs to align 20-year stumpage average with short-term stumpage projections. This is also used as the net revenue that is split with the counties.	High
Northern Spotted Owl Take Avoidance	Habitat requirement that a minimum amount of habitat must be available within an owl circle before any time of harvest is allowed. Incidental Take Guidelines are followed. Outer circles (1.2-1.5 mile radius) must maintain 40% habitat, while inner circles (0.7 mile) must maintain 50% habitat. In addition, adjacent landowner spatial information is used to estimate habitat contributions from adjacent landowners. As a coarse filter, it is assumed that public landowners provide owl habitat, while private landowners do not. This rule is an imperfect approximation of a Biological Assessment that would determine the status of owl habitat within a circle.	Medium-High (regionally dependent)
Marbled Murrelet Take avoidance	No harvest in Marbled Murrelet Management Areas (MMMA's). Light thinnings are allowed in MMMA buffers	Medium-High (depending on district)
Maximum clearcut size and green up requirements	No regeneration harvest > 120 acre patch size Very little regeneration harvest <= 10 acre patch size	Medium-High
Inner Gorge	No harvest allowed in defined inner gorge areas.	Medium
Standing inventory	Ensures that a given inventory is maintained throughout the planning horizon in the production-emphasis area	Medium
Logging costs	Logging costs are based on a 2014 study from Oregon State University (OSU), which surveyed local logging contractors. Costs varied by logging type (ground/cable/helicopter), average yarding distance, slope, and tree size.	Medium
Haul costs	Estimated costs for each road segment on the landscape, using estimated hourly truck costs and average haul speed estimates. Haul costs are estimated from harvest unit to a specific mill location that represents an average haul distance for each district.	Medium
Road construction/upgrade cost	The fixed costs are applied the first period that a road segment is used to haul logs. This cost is estimated as a \$ or \$/station cost. Construction costs are applied to road segments that must be built to access a unit, while upgrade costs are applied to road segments that require additional upgrades before available to log hauling.	Low-Medium(depending on district)
In-unit spur cost	The in-unit spur construction costs are in \$/acre harvested for the first entry. On subsequent entries, 20% of the original construction cost is applied to account for the cost of reopening the road.	Low-Medium(depending on district)
Road maintenance	Maintenance costs are based on the long-term maintenance of a road segment, including activities such as culvert replacement and brushing.	Low-Medium(depending on district)
Landslide and public safety	No harvest below required threshold on areas limited by Landslide and Public Safety (LSPS)	Low
FPA Wildlife protection	Areas identified as protected for FPA wildlife are not available for harvest (regeneration or thinning). Affected species include bald eagle, great blue heron, band-tailed pigeon.	Low
Stand Boundaries	Existing forest stand boundaries are delineated by Stand Level Inventory data. These boundaries are updated following management activities.	N/A
Harvest Units	Harvest Unit delineation: ODF originally contracted with a 3rd party contractor in 2004 to delineate logical operational harvest units in order to schedule harvests. These units are updated by districts on a regular after actual sale boundaries are delineated.	N/A