



Estimating the Range of Expected Tongass National Forest Timber Purchase and Sale Offer

Key Message

The Tongass National Forest, in compliance with the Tongass Timber Reform Act (1990), must seek to provide an annual supply of timber to meet market demand to the extent consistent with providing for multiple use and sustained yield of all renewable forest resources.

Issue

The 1997 Record of Decision for the *Tongass Land and Resource Management Plan* revision committed the Forest Service to develop procedures to ensure annual timber sale offerings would be consistent with implementing the “seek to meet market demand” language of the Tongass Timber Reform Act. In April 2000, the Forest Service published its procedures in *Responding to the Market Demand for Tongass Timber: Using Adaptive Management to Implement Section 101 of the 1990 Tongass Timber Reform Act* (Morse, 2000a).

The Forest Service Pacific Northwest Research Station has published several studies that estimate derived demand for timber in Southeast Alaska, most recently, Daniels et al. (2016). The derived demand projections from Daniels et al. (2016) were incorporated into the Morse Methodology and used to estimate needed Tongass National Forest timber sale offering for fiscal year 2020.

Background

The Morse Methodology is used to estimate annual Tongass National Forest timber sale offerings. The general approach of the Morse Methodology is to consider the timber requirements of Southeast Alaska’s sawmills at different levels of operation and under different assumptions about market conditions and technical processing capacity. The procedures address the uncertainty associated with forecasting market conditions, considering the continuing transformation of the timber industry and the inability of the Forest Service to respond quickly to market fluctuations due to the time it takes to prepare timber for sale.

Since the Morse Methodology was initially developed, inputs to the model have been adjusted to reflect new understandings and information, such as share of raw material provided by the Tongass National Forest to local processors, amount of time between purchase and harvest of a timber sale, and sawmill capacity. The methodology allows for adaptations to current situations.

As indicated in the model, planning the annual timber program requires more than just pure economic factors. To account for delays in timber sale preparation, objections, and/or litigation, sufficient contingency volume must be included in the annual timber sale program to account for realistic fall-downs. Furthermore, budget and organizational constraints limit the extent to which the Forest Service can respond to economic cycles and the associated fluctuations in timber demand. All of these factors must be considered in evaluating the annual market demand for timber and setting annual timber offerings.

The 2020 model results are attached.

More Information

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Page 2 of 2

Predicting Likely Tongass National Forest Timber Purchases and Offer Levels – Fiscal Year 2020

Model Item	Description	Notation	Baseline ¹	Scenario 1 Young Growth Transition	Scenario 2 Wood Energy Growth	Scenario 3 Housing Market Rebound
Demand						
A	Installed and Operable Sawmill Capacity [MMBF, Log Scale]	a	108	108	108	108
B	Industry Rate of Capacity Utilization ²	b	15%	15%	15%	15%
C	Share of Industry Raw Material Provided by Tongass National Forest	c	75%	75%	75%	75%
D	Percent of Useable Wood in Average Tongass National Forest Timber Sale	d	77%	77%	81%	77%
E	Annual Tongass National Forest Timber Consumption [MMBF, Theoretical]	$e = ((a*b)*c)/d$	16	16	15	16
F	Standard Deviation of Lead Time [Years]	f	0.98	0.98	0.98	0.98
G	Average Lead Time [Years]	g	1.24	1.24	1.24	1.24
H	Probability of Meeting Consumption [One-Tailed Test for 90% at Infinity]	h	1.28	1.28	1.28	1.28
I	Timber Inventory Requirements [MMBF]	$i = (e*g) + ((e*h)*f)$	40	40	38	40
J	Volume Under Contract [MMBF]	j	60	60	60	60
K	Projected Harvest [MMBF], 2020 [per PNW]	k	45	45	52	45
L	Projected Inventory Shortfall [MMBF]	$l = i - j$	-20	-20	-22	-20
M	Low Range of Expected Timber Purchases [MMBF], FY20	$m = \text{if } 1 < 0, k + 1, \text{ else } k$	24	24	30	25
N	High Range of Expected Timber Purchases [MMBF], FY20	$n = \text{if } 1 < 0, \text{ else } k + 1$	45	45	52	45
O	Expected Timber Purchases, FY20	$o = \text{median } (m:n)$	34	34	41	35
Offer						
P	Fall-Down Between Volume Offered and Sold	p	32%	32%	32%	32%
Q	Offer Needed to Meet Volume Under Contract (VUC) Objectives	$q = o + (p*o)$	45	45	54	46

Note: Table information represents fiscal year 2020 data and may not represent current fiscal year data.

¹Baseline included for illustrative purposes only and should not be used for project planning or decision-making.

²Based on standard 250-day per year, two shifts per day annual operating schedule.