Background

Every Tongass Forest Plan planned for a transition to young growth with the intent to manage timber lands intensively on lands deemed suitable for timber production. TLMP97 projected that regeneration harvesting of existing young growth would begin in the 4th decade (2030) of the plan, new young growth in 7th decade (2060), with complete reliance on young growth in the 9th decade beginning at year 2080. This was based on stands growing until each had reached culmination of mean annual increment (CMAI). On the Tongass, analysis based on intensive growth and yield work (with plot work beginning in the 1930s) showed that most stands on the Tongass will culminate between the ages of 80-110.

Transition Framework (May 2010)

On May 25, 2010, the Department of Agriculture Secretary proposed a Transition Framework to guide and enhance economic development and timber harvesting opportunities outside of roadless areas. The framework called for providing jobs and community stability for SE Alaskan communities in an effort to diversify the economy while proposing a new approach to forest management on the Tongass National Forest. This new approach was to build from the existing Tongass Land Management Plan (2008) and move timber harvesting into roaded, young-growth areas and away from old-growth timber in roadless areas. As part of the broader transition framework, the USFS was directed to work with its USDA counterpart Rural Development to facilitate a transition of the forest sector away from old-growth harvests and to young growth. It was recognized that moving towards a forest industry that relied on young-growth timber would require a steady supply for the current industry to make the transition. This was to be accomplished by bridging the transition with long-term stewardship contracts in young-growth areas to create investment certainty for forest operator business owners.

Tongass Young-growth Coordinator Position (spring 2010)

Due to growing interest in young-growth management on the Tongass, the Forest created a position and hired a young-growth coordinator as the point in closing knowledge gaps for transitioning to a young-growth based industry. Building from the initial young-growth inventory efforts on Prince of Wales Island in 2006, this position initiated and oversaw the continued effort in 2011 to 2012 of inventorying young growth across the Tongass. This inventory allowed for the initial stand up of a growth and yield model (FPS) for projecting young-growth conditions across the Forest and for the various pilot projects discussed below.

Leader's Intent: Forest Stewardship and Young-Growth Management on the Tongass National Forest (January 2013)

After the 2010 Transition Framework, questions persisted about what the transition was going to look like and how it fit in with other programs. In January 2013, a "Leader's Intent" document was released by the R10 Regional Forester and the Tongass Forest Supervisor that outlined the vision and goals for the future young-growth timber program on the Tongass National Forest. While the document affirmed that a future forest industry will be supported mainly by young-growth harvest, it acknowledged that the transition to young growth would need to be gradual rather than abrupt to allow time for the young trees to mature and allow operators to adjust, adapt, and develop markets for new products. The future vision of the timber program in this document was that the majority of active forest management on the Tongass would eventually be comprised of ecological restoration, precommercial thinning, small and microsale old-growth timber sales focused on niche markets, and a young-growth forest management program. These projects would in turn supply local and regional wood products markets.

USDA Secretary's Memorandum 1044-009 (July 2013)

The Secretary of Agriculture issued Memorandum 1044-009 A*ddressing Sustainable Forestry in Southeast Alaska,* dated July 2, 2013. The memorandum guides management of the Tongass National Forest to:

Speed the transition away from old-growth timber harvesting and towards a forest industry that utilizes second growth – or young growth – forests. Moreover, we must do this in a way that preserves a viable timber industry that provides jobs and opportunities for residents of Southeast Alaska (USDA 2013, 1). This memorandum led to the initiation of the Forest Plan amendment.

Forest Plan Amendment (December 2016)

The Forest Plan Amendment amended the 2008 Tongass Land and Resource Management Plan (2008 Forest Plan) and was developed using the current Planning Rule, issued in 2012. It was developed by best available science, current laws, and broad public participation including a cooperating agency (U.S. Fish and Wildlife Service); consultation with Alaska Native tribes and Alaska Native Corporations; and advice and recommendations from the Tongass Advisory Committee (TAC).

Guidance in the amended Forest Plan provides for:

Transitioning to a more economically, socially and ecologically sustainable timber program on the Tongass by:

- Accelerating the transition (from 32 years under the 2008 Forest Plan to 16 years) from old-growth to young-growth forest management, and maintaining a viable timber industry.

- Promoting more sustainable and diverse local economies by encouraging renewable energy production.

- Maintaining the integrity of the Tongass Conservation Strategy to provide ecological conditions that maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area.

Things to know:

Acres suitable for timber harvest by Forest Plan version

1997	676,000 acres
2008	663,000 acres
2016	592,000 acres (333,464 young-growth acres)

Total acres of even aged young growth = 408,000 (approximately)

Analysis of how to transition to young growth more quickly began in earnest around 2009.

- An unthinned young growth stand—
    - Is expected to become commercially viable 10-20 years later than a precommercially thinned (PCT'd) stand

    - Needs to be about 70 years old to commercially thin
    - The oldest stands are predominantly unthinned.
    - Unthinned stands are much less stable than thinned, meaning that any kind of intermediate (partial harvest) sort of treatment may unravel (see CT study, Naukati replicate).
- A thinned young growth stand—
    - Is expected to be commercially viable around age 60-70 on productive sites.
    - Is much more stable and wind resistant; means there are more treatment options available.
    - Thinning began in late 1970s so stands prior to 1968 are primarily unthinned.
- Rotational harvest of YG using even-age management has been the predominant method considered for the future YG industry for several reasons:
    - The initial harvest consisted of a lot of downhill cable yarding. Unless more roads are built, partial harvests using downhill cable is very complex, difficult, costly, and dangerous.
    - The suitable/available landbase is half of the 2008 Forest Plan. The TAC emphasized maximizing harvest on timber LUDs to minimize impact to OG and YG on non-timber LUDs.
    - Given the 'fall down' in each unit (average of 40 percent), it is expected that even maximizing timber with even-aged harvests would still produce a mosaic of openings across the landscape with areas left for stream buffers, oversteepened slopes, alder-dominated areas and other reasons.
    - In order to harvest commercial sized trees via a thin, the stand must be older to allow for the co-dominant trees to be the ones targeted. Studies conducted on the Forest prove taking the largest trees out during a thin can lead to unraveling of a stand.

Given the high amount of variability in young stands, the isolation of timber is a major consideration during planning of treatments. The use of even-aged management is the best tool to avoid economic isolation of suitable timber.

Young growth inventory and the Challenge Cost Share Agreement (CCSA)

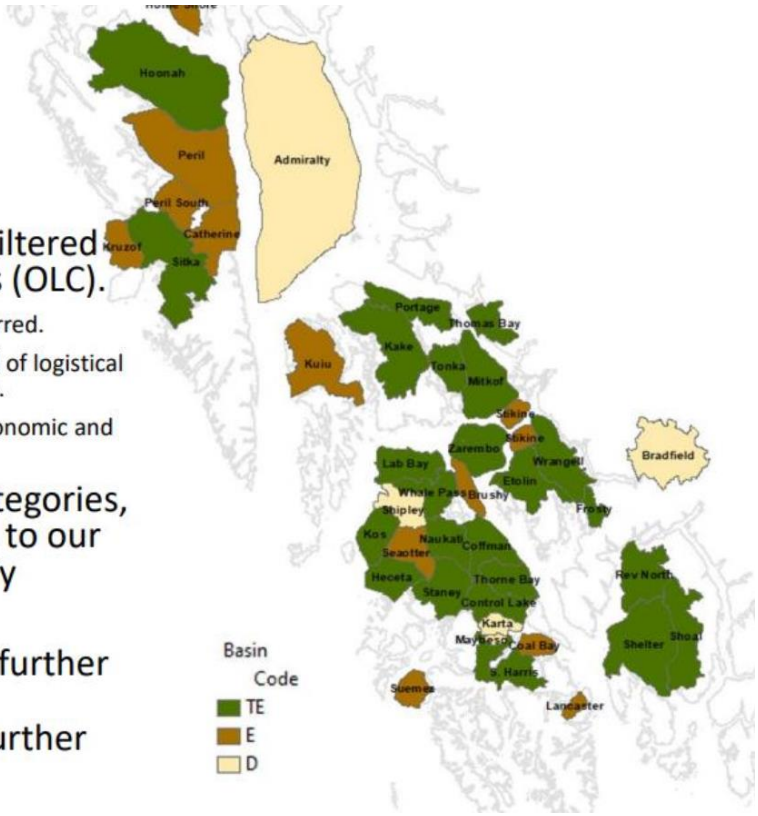
The Tongass Young-Growth CCSA and other forest inventory efforts (2015 to 2020) accomplished extensive field-based young stand measurements and related data analyses to create new and update existing forest planning tools. This work included developing a new forest-wide GIS layer of all young-growth stands and an accompanying growth and yield model (FPS) update that now allow for accurate projections of when young stands are expected to reach certain silvicultural and planning milestones like commercial viability (the 2-log condition). Aspects of the work were accomplished with administrative support and technical oversight provided by a multi-agency steering committee comprised of leadership and professional resource staff from USDA State & Private Forestry, USDA Forest Service, and the Alaska Division of Forestry. This work is currently being leveraged by the Forest to make long-range projections regarding future volume availability and sustainability as well as to plan where to initiate young-growth harvesting projects.

Latest analysis:

The Forest has been delineated into 52 basins and assigned a likelihood of future young-growth timber harvest based on direction provided in the Forest Plan for suitable LUDs.

Basin delineations[II]:

- Basin delineation can be further filtered into operational likelihood classes (OLC).
  - Deferred (D): Basin most likely to be deferred.
  - Economic (E): Basin with a high likelihood of logistical challenges due to infrastructure and location.
  - Techno-Economic (TE): Basin that is economic and logistically most feasible.
- With a focus on basin and OLC categories, we can link our volume estimates to our most feasible areas (TE) or identify infrastructure needs (E).
- Basin and OLC categories may be further refined to account for other land ownership, infrastructure, or as further information is available.



Green basins have the best chance of successful, unsubsidized young-growth projects where stumpage values are positive (road networks, geographic location, LTFs, etc).

Temporal analysis has been conducted to get an idea of when each stand may have commercial young-growth timber.

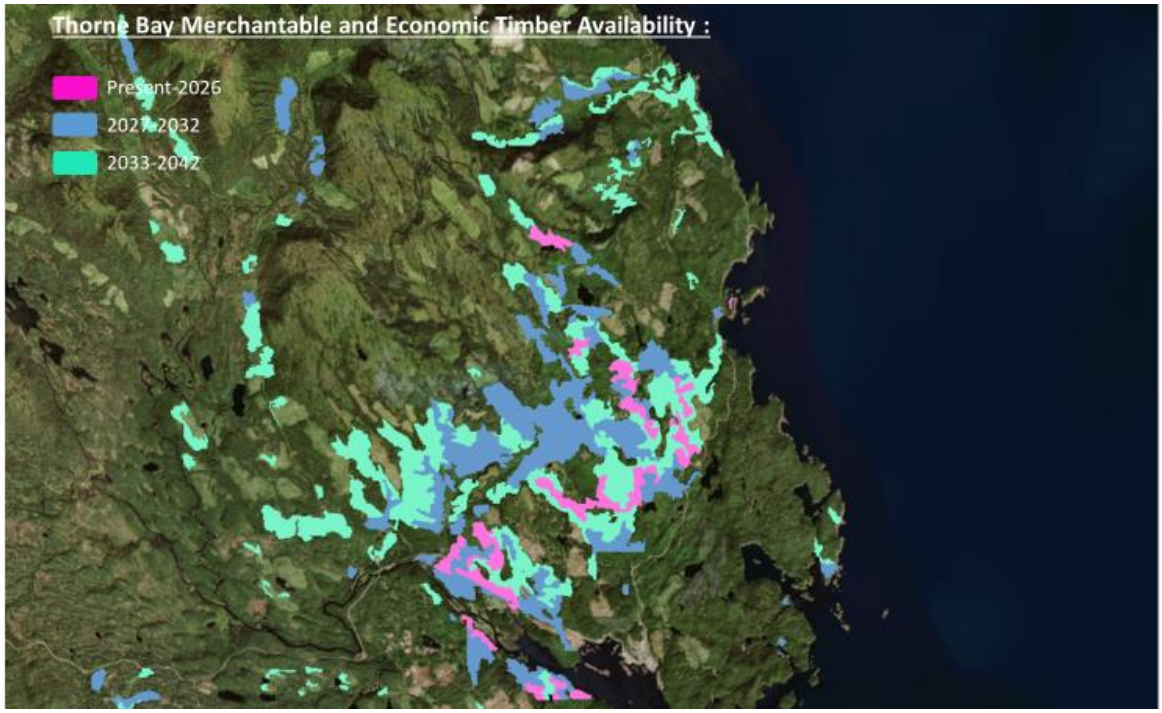


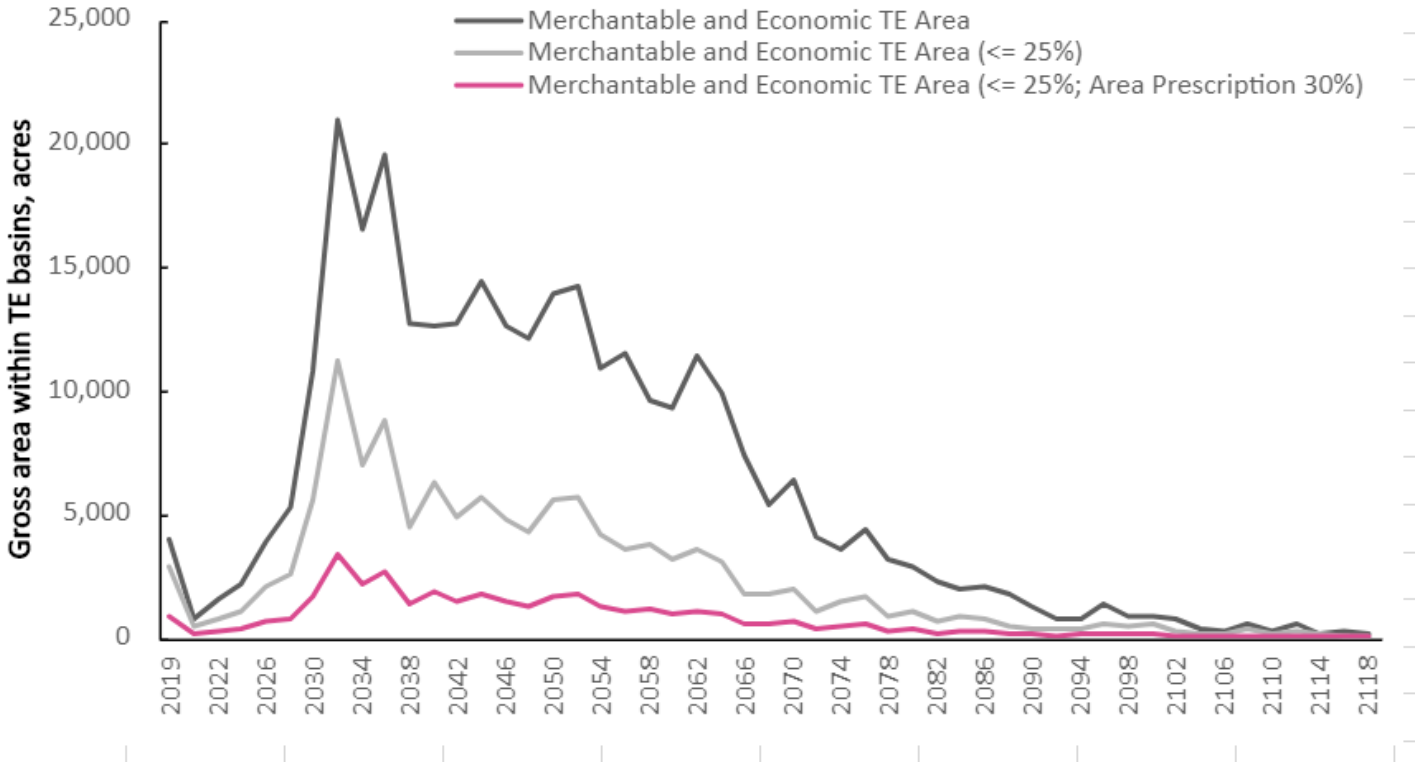
Table 3. Southern Tongass cumulative and time period available merchantable and economic volume (MMBF) by working basin and operational likelihood class (OLC)*

			Cumulative volume, MMBF								Time period volume, MMBF							
			2026		2032		2042		2072		2019-2026		2027-2032		2033-2042		2043-2072	
District	Basin	OLC	Area	Volume	Area	Volume	Area	Volume	Area	Volume	Area	Volume	Area	Volume	Area	Volume	Area	Volume
POWRD	Suemez	E	0	0.0	1	0.0	28	0.6	860	19.7	0	0.0	1	0.0	27	0.6	832	19.1
POWRD	Lancaster	E	0	0.0	27	0.6	455	10.5	1,281	31.4	0	0.0	27	0.6	428	9.9	826	20.9
POWRD	S. Harris	TE	802	17.1	2,260	48.8	4,023	87.5	9,532	222.4	802	17.1	1,458	31.8	1,763	38.7	5,509	134.9
POWRD	Maybeso	D	70	1.6	1,140	25.2	1,454	32.0	1,761	38.5	70	1.6	1,069	23.6	315	6.8	307	6.5
POWRD	Coal Bay	E	0	0.0	0	0.0	5	0.1	608	12.7	0	0.0	0	0.0	5	0.1	603	12.6
POWRD	Karta	D	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
POWRD	POW S. Remote	D	17	0.4	209	4.6	575	12.5	996	21.8	17	0.4	192	4.2	366	7.9	421	9.3
POWRD	Control Lake	TE	241	5.9	974	22.6	2,287	51.6	6,675	154.8	241	5.9	733	16.8	1,313	28.9	4,388	103.3
POWRD	Staney	TE	611	13.4	2,463	55.2	7,485	169.7	14,951	341.4	611	13.4	1,853	41.8	5,022	114.5	7,467	171.7
POWRD	Heceta	TE	984	22.7	3,379	76.2	5,311	120.3	9,174	204.7	984	22.7	2,395	53.5	1,932	44.2	3,863	84.3
POWRD	Kos	TE	607	14.2	3,251	72.2	5,250	116.7	5,872	130.3	607	14.2	2,644	58.0	1,999	44.6	622	13.6
POWRD	Seaotter	E	161	3.9	221	5.2	1,224	26.6	2,411	51.7	161	3.9	60	1.4	1,004	21.4	1,186	25.1
POWRD	Naukati	TE	7	0.2	441	9.6	1,002	21.8	4,102	89.4	7	0.2	434	9.5	561	12.1	3,100	67.6
POWRD	Coffman	TE	343	8.0	1,640	37.5	4,543	100.9	11,134	245.6	343	8.0	1,298	29.5	2,902	63.4	6,592	144.7
POWRD	Thorne Bay	TE	672	14.3	3,287	72.1	6,823	155.2	11,936	273.6	672	14.3	2,615	57.8	3,537	83.1	5,112	118.4
POWRD	Shipley	D	0	0.0	56	1.2	141	3.0	293	6.2	0	0.0	56	1.2	85	1.8	152	3.2
POWRD	Whale Pass	TE	279	6.4	2,742	61.1	7,260	167.3	12,758	293.5	279	6.4	2,463	54.6	4,518	106.2	5,498	126.3
POWRD	Whale Pass Remote	D	0	0.0	10	0.2	136	3.0	225	4.9	0	0.0	10	0.2	126	2.8	90	1.9
POWRD	Lab Bay	TE	98	2.5	1,191	26.1	2,511	55.1	7,957	176.4	98	2.5	1,092	23.6	1,320	29.0	5,447	121.3
POWRD	POW Remote	D	0	0.0	44	1.0	46	1.0	46	1.0	0	0.0	44	1.0	2	0.0	0	0.0
KMRD	Shoal	TE	40	0.9	653	14.2	2,429	52.3	6,062	138.4	40	0.9	614	13.3	1,775	38.1	3,634	86.2
KMRD	Shelter	TE	156	3.5	196	4.6	408	9.2	1,265	29.8	156	3.5	40	1.1	213	4.6	857	20.6
KMRD	Rev North	TE	839	19.2	1,898	42.1	4,949	107.6	12,085	274.8	839	19.2	1,058	23.0	3,051	65.5	7,136	167.2
KMRD	KTN Remote	D	7	0.2	32	0.7	85	1.9	386	8.2	7	0.2	24	0.5	53	1.2	301	6.3
Combined OLC		D	95	2.1	1,491	32.9	2,438	53.3	3,709	80.5	95	2.1	1,396	30.7	946	20.5	1,271	27.2
Combined OLC		E	161	3.9	249	5.8	1,713	37.9	5,161	115.5	161	3.9	88	1.9	1,464	32.1	3,448	77.6
Combined OLC		TE	5,679	128.2	24,374	542.3	54,281	1,215.0	113,505	2,575.0	5,679	128.2	18,695	414.1	29,907	672.7	59,224	1,360.0
Combined OLC		D,E,TE	5,934	134.2	26,114	580.9	58,431	1,306.2	122,374	2,771.0	5,934	134.2	20,180	446.8	32,318	725.3	63,943	1,464.8

*Operational likelihood class (OLC) estimates basins most likely to be deferred (D), basins with a high likelihood of logistical challenges due to infrastructure and location (E), and basins that are logistically most feasible (TE); The following labels represent these three categories: Deferred (D), Economic (E), Techno-Economic (TE).

If young growth were to move away from rotational harvest, a conservative approach to analyzing, at this time, is to assume that cable will be too difficult to use and helicopter would be too costly, thereby reducing the area for consideration to ground-based systems. This would be for commercial sales with expected positive stumpage based on current markets and input from purchasers. If there is an influx of money for restoration, and positive stumpage is not an issue, we would likely consider stands outside of the techno economic land base. That would potentially open more acres but probably not a significant number of acres.

Below shows what that might look like in terms of acres that could be operated on in an economically viable manner.



*the use of 25% in the FPS model represents a range, and therefore best captures potential shovel ground (generally considered <35% slopes).

Things to consider going into the future:

It is highly unlikely that the operators that bid on old-growth timber sales would overlap with the operators that will do the restoration treatments.

Restoration (co-intent) treatments would, based on past experience, likely be small in scale due to expense and other limiting factors such as operability of equipment, and the size of stands that can yield commercial sized timber from a prescription that would maintain the largest trees.

Some scenarios as potential for future prioritization of forest management based upon integration of resources:

1. Select basins that have the best chance of economical timber sales in young growth and

then analyze those basins for the suite of potential restoration projects that could be integrated together over time into various projects—timber sales that yield trust fund receipts and/or stewardship projects, restoration-only projects that would likely be small in scale and would attract small, potentially new, operators, and other restoration work such as road and culvert improvements, riparian treatments, etc.

2. Select basins that are rated TE but have the highest restoration needs. This may yield less-economical timber sale opportunities early on in the decade, but the same integrated projects could be accomplished in those basins with a greater reliance on the likely small scale, subsidized treatments
3. Select areas to go to based purely on restoration needs first; if there are commercial young-growth timber opportunities, that would be a non-driving factor in where to plan projects. This scenario would be least likely to lead to a long-term industry.