Tongass Young Growth Update Report 2021

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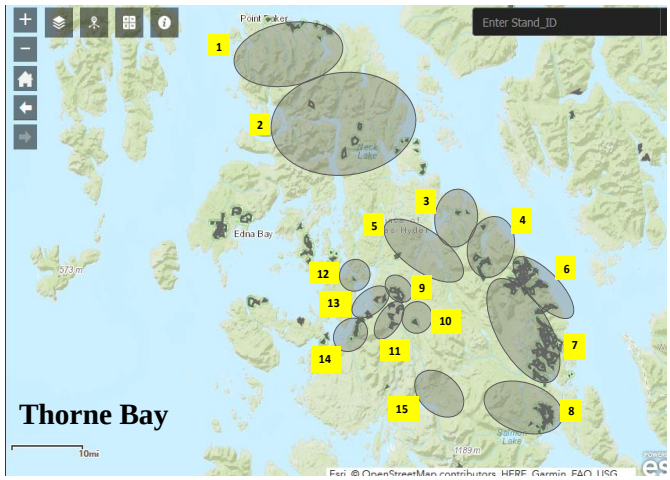
Transition to young growth logging away from old growth logging can happen now … in 2020. This, according to the latest timber inventory work and analysis conducted by three independent organizations between 2015-2019:

- 2015: Alaska-based timber cruising company Terra Verde was contracted by Oregon-based Mater Engineering dba Mater Ltd to undertake young growth timber inventory on the Tongass using a one plot per acre cruise protocol. Almost 900 YG acres aged 40 to 55 years in the Thorne Bay Ranger and Petersburg Ranger Districts were inventoried and analyzed. All timber cruise data (~ $200,000 paid for by private funding) was delivered to the Tongass National Forest (TNF) free of charge.

- 2016: In exchange for the new timber cruise data shared by Mater, the TNF provided all GIS metadata files on the Tongass National Forest allowing for comprehensive analysis of all young growth acres throughout the national forest. For analysis purposes, all young growth acres with environmental issues were eliminated from the analysis (karst, cave, beach, LUD, roadless, etc). Remaining acres were deemed "suitable". Suitable acres were then netted down to only those acres located within 800' of currently open Forest Service roads ("roaded"). From a starting point of ~ 430,000 acres of young growth throughout the entire national forest, a total of ~ 130,000 acres of suitable, roaded young growth stands were identified for current and future harvest spanning over 5 decades. Approximately 85% of these acres were "clustered" (vs scattered) acres where 500 + contiguous acres of 55 + yr old stands were identified per working circle. Almost 60% of these acres were pre-commercially thinned. Approximately 50% of all acres had a site index of 90+; another 40% had a site index of 74-89.

- Between 2016-2018, the US Forest Service in partnership with the State of Alaska Division of Forestry conducted an intensive young growth inventory covering ~ 40,000 acres in five working circles throughout the Tongass (Klawok, Ketchikan, Petersburg, Wrangell, and Kake)

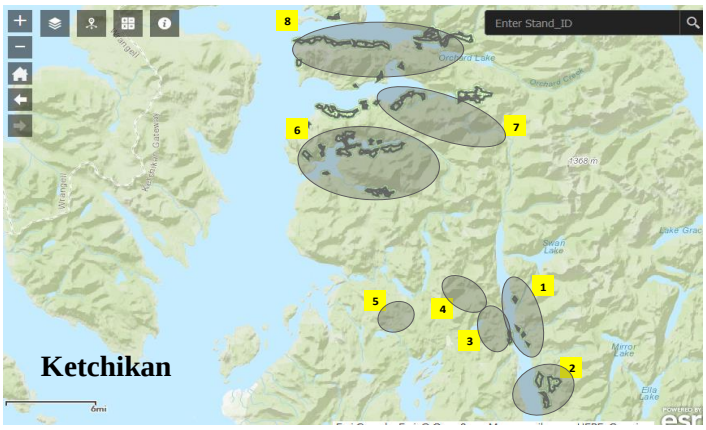
The results contained in this summary on young growth options and opportunities in SE Alaska have resulted from over 6 years of UFSF GIS metadata analysis, in-field timber cruising conducted throughout the Tongass National Forest by the USFS Region 10 and the Tongass National Forest District Office, the USFS Pacific Northwest Research Station, and Mater Engineering dba Mater Ltd. (under contract with the Natural Resource Defense Council in Alaska and Oregon-based GEOS Institute).

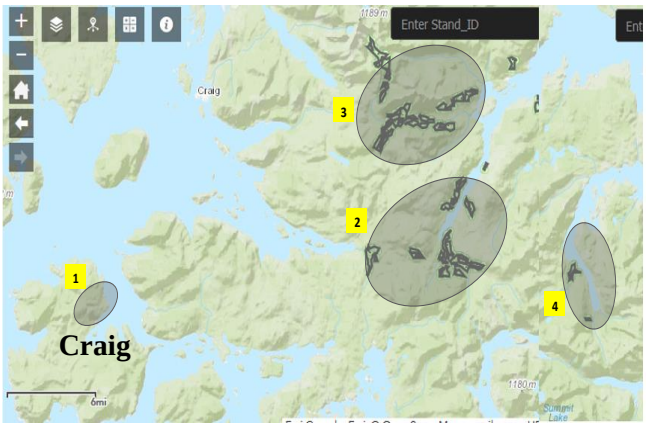


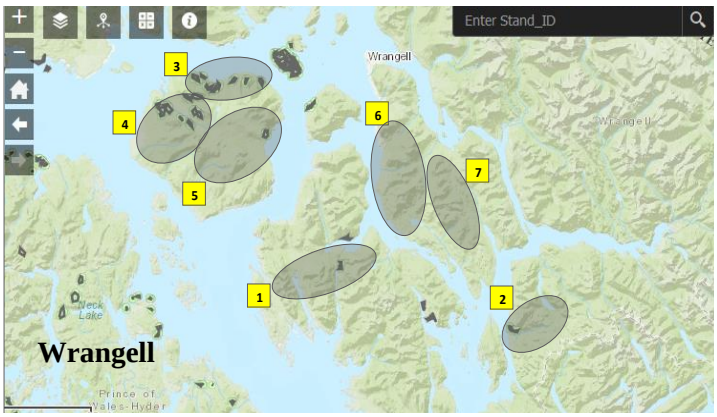
Total of 43 timber volume working circles analyzed:

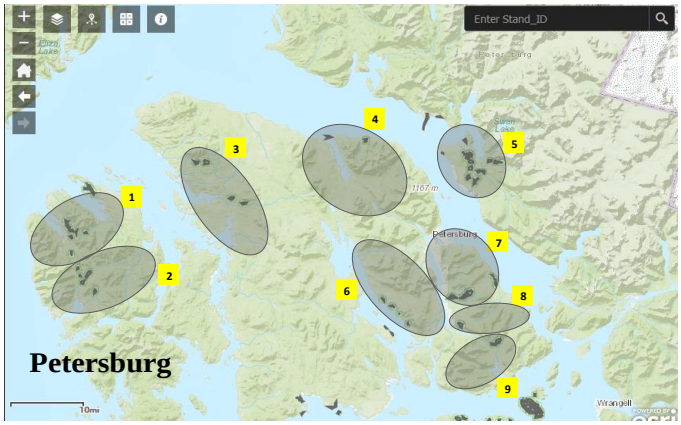
- **15** DataBasin working circles in the Thorne Bay region;
- **4** working circles in the Craig region;
- **8** working circles in the Ketchikan region;
- **9** working circles in the Petersburg region;
- **7** working circles in the Wrangell region.

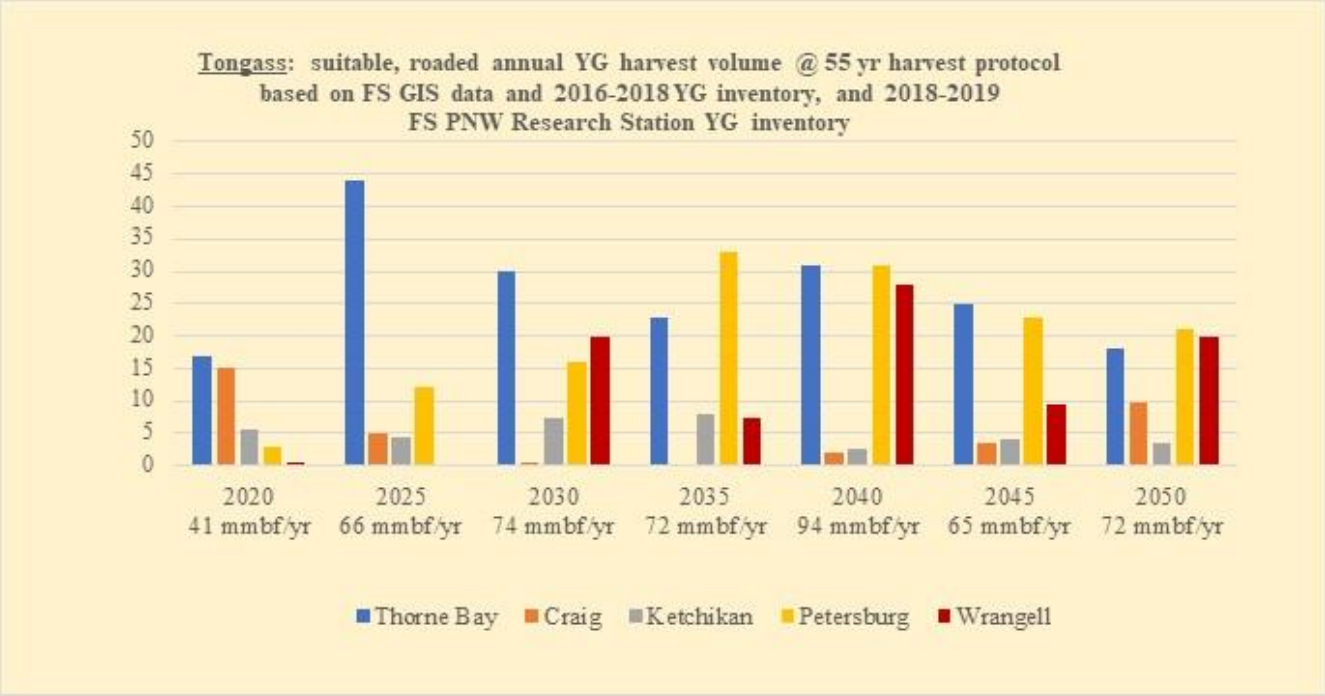
2017-2019 USFS young growth timber cruise sites shown as gray outlines with DataBasin working circles as overlay.

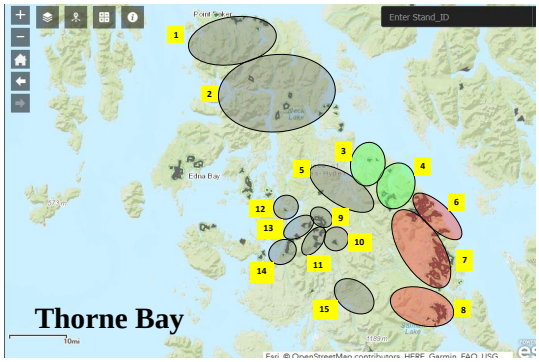


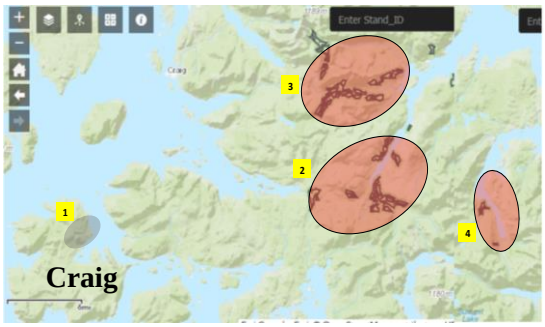


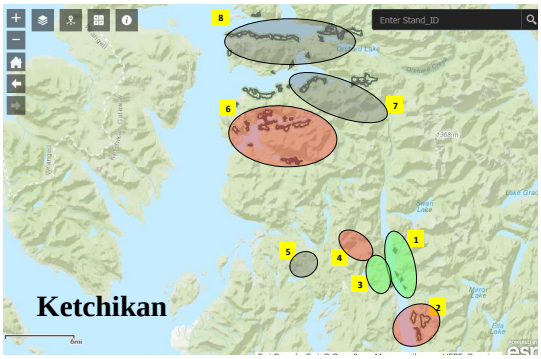


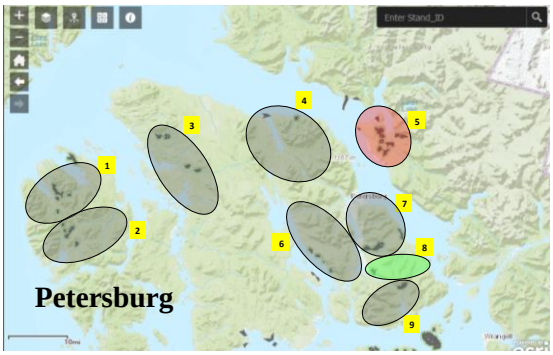


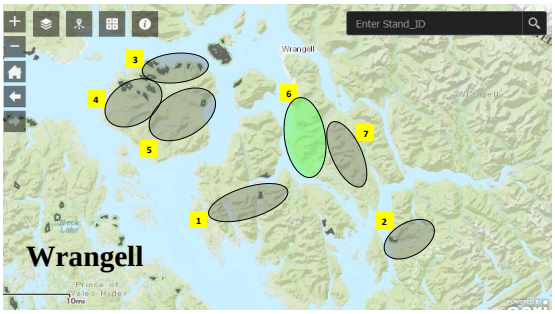

Tongass: suitable, roaded annual YG harvest volume @ 55 yr harvest protocol based on FS GIS data and 2016-2018 YG inventory, and 2018-2019 FS PNW Research Station YG inventory
50
45
40
35
30
25
20
15
10
5
0
2020 41 mmbf/yr
2025 66 mmbf/yr
2030 74 mmbf/yr
2035 72 mmbf/yr
2040 94 mmbf/yr
2045 65 mmbf/yr
2050 72 mmbf/yr
Thorne Bay
Craig
Ketchikan
Petersburg
Wrangell











2020 - 2024

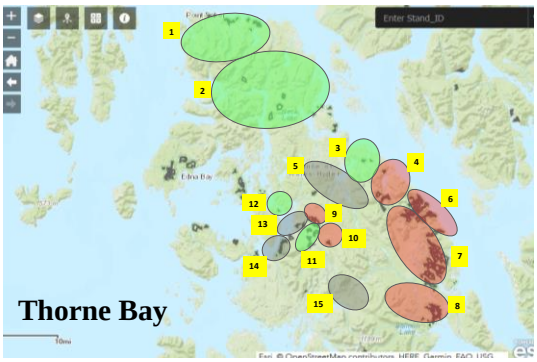
Between **37.5 to 41.3 mmbf/yr** (9,367 cluster acres; 10,328 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 91% of those acres are contiguous acre clusters of 500 acres or more. 35% of acres are PCT; 65% are non-PCT.

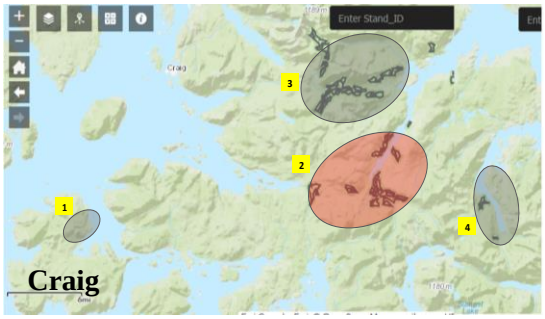
	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of total acres in clusters
Total All Supply Areas **Total acres: 10,328** **5-yr total: 206.5 mmbf** **Total per yr: 41.3 mmbf** **Acres in cluster areas 500+ contiguous acres: 9,367 acres (91% of total)**	Thorne Bay	Areas: red clusters + 3,4 4,286 acres: 86 mmbf 17 mmbf/yr	Cluster areas: 6,7,8 _____ 3,756 acres _____ 75 mmbf or 15 mmbf/yr 33% PCT; 67% non-PCT	88%
	Craig	Areas: red clusters only 3,845 acres 77 mmbf 15.4 mmbf/yr	Cluster areas: 2,3,4 _____ 3,845 acres _____ 77 mmbf or 15.4 mmbf/yr 30% PCT; 70% non-PCT	100%
	Ketchikan	Areas: red clusters + 1-4 1,437 acres 28.7 mmbf 5.7 mmbf/yr	Cluster area: 6 _____ 1,222 acres _____ 24.4 mmbf or 5 mmbf/yr 35% PCT; 65% non-PCT	85%
	Petersburg	Areas: red clusters + 8 733 acres 14.6 mmbf 3 mmbf/yr	Cluster area: 5 _____ 544 acres _____ 10.9 mmbf or 2.2 mmbf/yr 88% PCT; 12% non-PCT	74%
	Wrangell	Area: 6 27 acres .541 mmbf .108 mmbf/yr	NA	NA

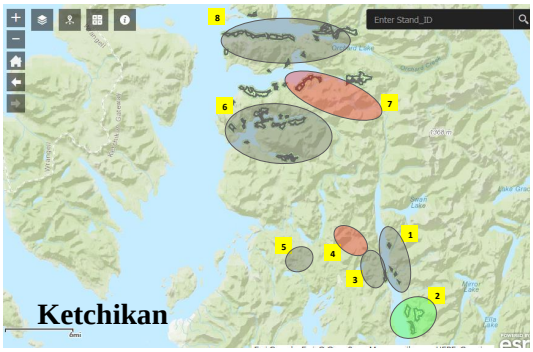
* = 1) Harvest at 55 years old;
2) All environmentally sensitive acres excluded from harvest consideration;
3) Only young growth stands within 800' of currently open FS roads included for harvest.

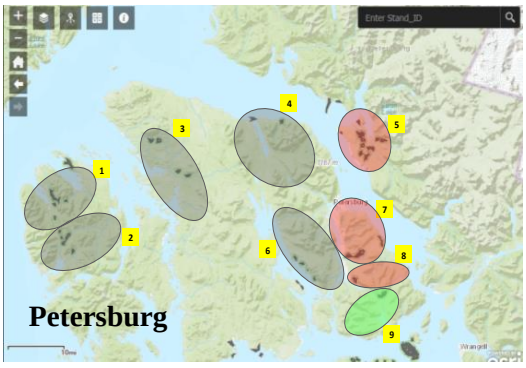
** = Cluster acres are contiguous (not scattered) 500 + acre clusters within 800' of open Forest Services roads.

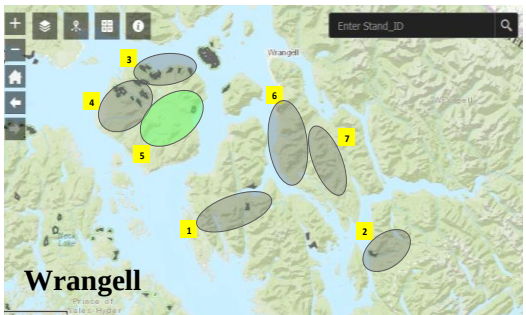
Note: 2020 - 2029 @ 20 mbf/ac
2030 - 2050 @ 25 mbf/ac
Includes 10% netdown for downfall & defect











2025 - 2029

Between **63.7 to 66 mmbf/yr** (15,920 cluster acres; 16,517 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 96% of those acres are contiguous acre clusters of 500 acres or more. 89% of acres are PCT; 11% are non-PCT.

	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of acres in clusters
Total All Supply Areas **Total acres: 16,517** **5-yr total: 330 mmbf** **Total per yr: 66 mmbf** **Acres in cluster areas 500+ contiguous acres: 15,920 acres (96% of total)**	Thorne Bay	Areas: red clusters + 1-3, 11-12 11,075 acres: 221 mmbf 44 mmbf/yr	Cluster areas: 4, 6 thru 10 _____ 10,530 acres _____ 210 mmbf or 42 mmbf/yr 94% PCT; 6% non-PCT	95%
	Craig	Area: 2 1,260 acres 25 mmbf 5 mmbf/yr	Cluster area: 2 _____ 1,260 acres _____ 25 mmbf or 5 mmbf/yr 88% PCT; 12% non-PCT	100%
	Ketchikan	Areas: red clusters + 2 1,099 acres 22 mmbf 4.4 mmbf/yr	Cluster areas: 4,7 _____ 1,081 acres _____ 21.6 mmbf or 4.3 mmbf/yr 6% PCT; 94% non-PCT	98%
	Petersburg	Areas: red clusters + 9 3,083 acres 62 mmbf 12 mmbf/yr	Cluster areas: 5,7,8 _____ 3,049 acres _____ 60.9 mmbf or 12.2 mmbf/yr 100% PCT	99%
	Wrangell	Area: 5 1 acre .018 mmbf .004 mmbf/yr	NA	NA

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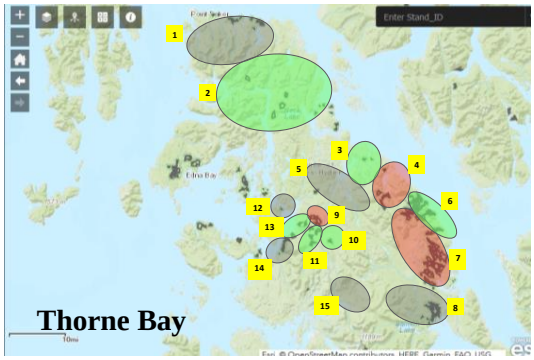
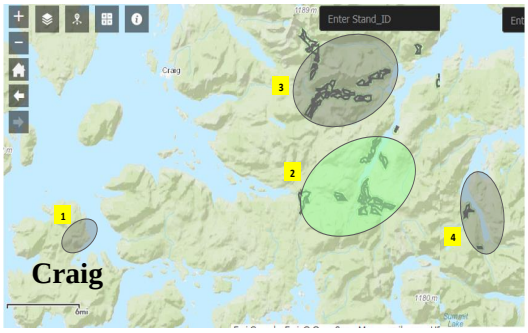
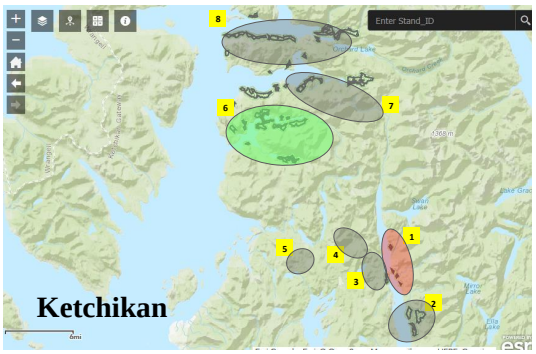
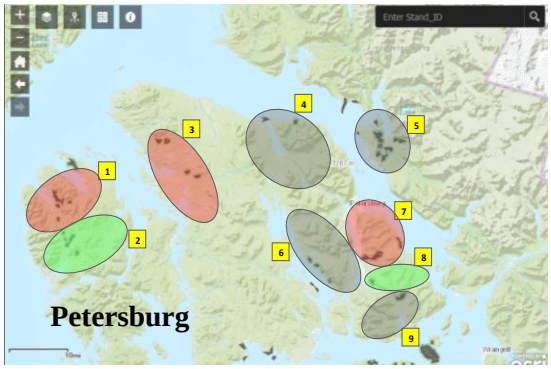
** = Cluster acres are contiguous (not scattered) 500 + acre clusters within 800' of open Forest Services roads.

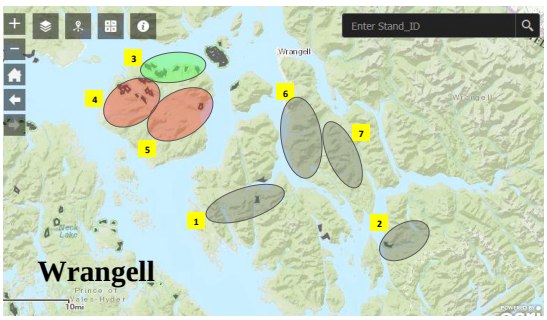
Note: 2020 - 2029 @ 20 mbf/ac
2030 - 2050 @ 25 mbf/ac
Includes 10% netdown for downfall & defect











2030 - 2034

Between **65 to 74 mmbf/yr** (12,979 cluster acres; 14,730 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 88% of those acres are contiguous acre clusters of 500 acres or more. 88% of acres are PCT; 12% are non-PCT.

	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of acres in clusters
Total All Supply Areas **Total acres: 14,730** **5-yr total: 368 mmbf** **Total per yr: 73.6 mmbf** **Acres in cluster areas 500+ contiguous acres: 12,979 acres (88% of total)**	Thorne Bay	Areas: red cluster + 2,3,6,10,11,13 5,930 acres 148 mmbf 30 mmbf/yr	Cluster areas: 4,7,9 5,094 acres 127 mmbf or 25.4 mmbf/yr 77% PCT; 23% non-PCT	86%
	Craig	Area: 2 93 acres 2.3 mmbf .465 mmbf/yr	NA	NA
	Ketchikan	Areas: red cluster +6 1,466 acres 36.6 mmbf 7.3 mmbf/yr	Cluster area: 1 1,264 acres 32 mmbf or 6.3 mmbf/yr 85% PCT; 15% non-PCT	86%
	Petersburg	Areas: red clusters + 2,8 3,156 acres 79 mmbf 16 mmbf/yr	Cluster areas: 1,3,7 2,979 acres 74.5 mmbf or 15 mmbf/yr 91% PCT; 9% non-PCT	94%
	Wrangell	Areas: red clusters + 3, 4,085 acres 102 mmbf 20.4 mmbf/yr	Cluster areas: 4,5 3,641 acres 91 mmbf or 18 mmbf/yr 95% PCT; 5% non-PCT	89%

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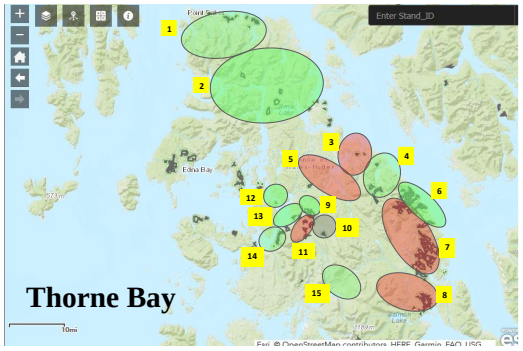
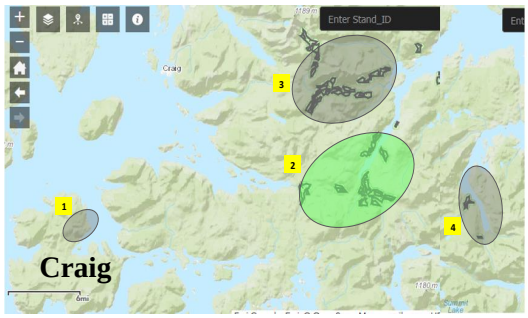
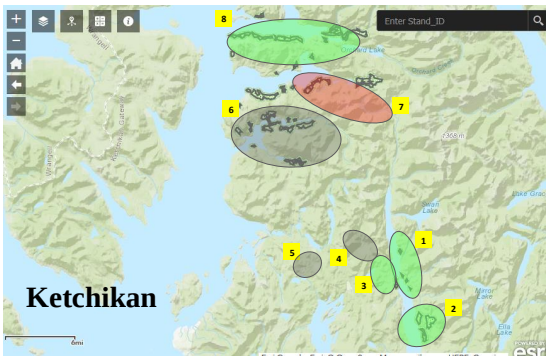
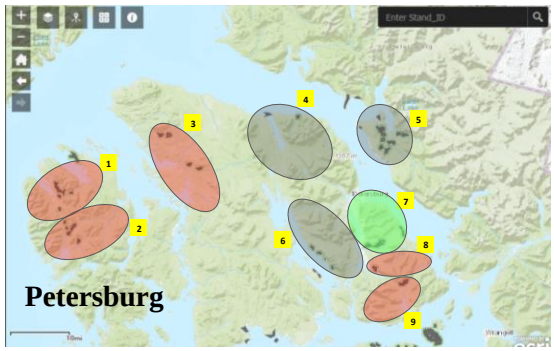
** = Cluster acres are contiguous (not scattered) 500 + acre clusters within 800' of open Forest Services roads.

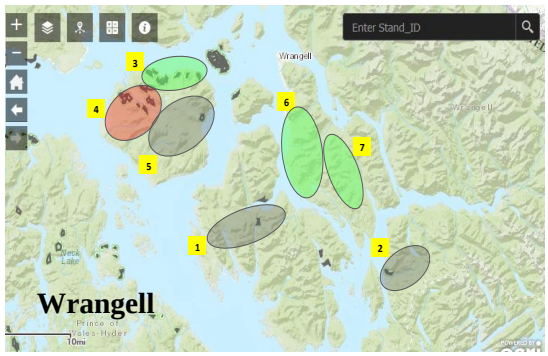
Note: 2020 - 2029 @ 20 mbf/ac
2030 - 2050 @ 25 mbf/ac
Includes 10% netdown for downfall & defect











2035 - 2039

Between **57 to 72 mmbf/yr** (11,459 cluster acres; 14,412 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 80% of those acres are contiguous acre clusters of 500 acres or more. 84% of acres are PCT; 16% are non-PCT.

	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of acres in clusters
Total All Supply Areas **Total acres: 14,412** **5-yr total: 360 mmbf** **Total per yr: 72 mmbf** **Acres in cluster areas 500+ contiguous acres: 11,459 acres (80% of total)**	Thorne Bay	Areas: red clusters + 1,2,4,6,9,12-15 4,615 acres: 115 mmbf 23 mmbf/yr	Cluster areas: 3,5,7,8,11 _____ 3,540 acres _____ 88 mmbf or 17.6 mmbf/yr 85% PCT; 15% non-PCT	77%
	Craig	Area: 2 30 acres .754 mmbf .150 mmbf/yr	NA	NA
	Ketchikan	Areas: red cluster + 1,2,3,8 1,655 acres 41 mmbf 8 mmbf/yr	Cluster area: 7 _____ 805 acres _____ 20 mmbf or 4 mmbf/yr 100% PCT	49%
	Petersburg	Areas: red cluster + 7 6,645 acres 166 mmbf 33 mmbf/yr	Cluster areas: 1,2,3,8,9 _____ 6,434 acres _____ 161 mmbf or 32 mmbf/yr 81% PCT; 19% non-PCT	97%
	Wrangell	Areas: red clusters + 3,6,7 1,467 acres 36.6 mmbf 7.3 mmbf/yr	Cluster area: 4 _____ 679 acres _____ 17 mmbf or 3.3 mmbf/yr 79% PCT; 21% non-PCT	46%

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Note: 2020 - 2029 @ 20 mbf/ac
2030 - 2050 @ 25 mbf/ac
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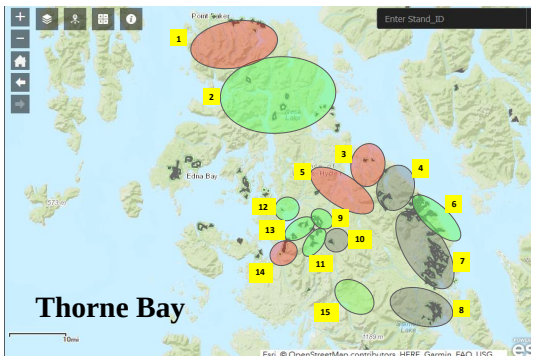

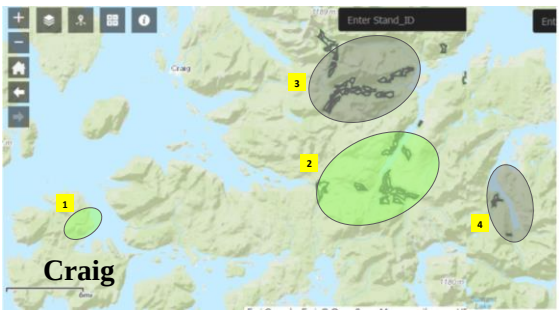

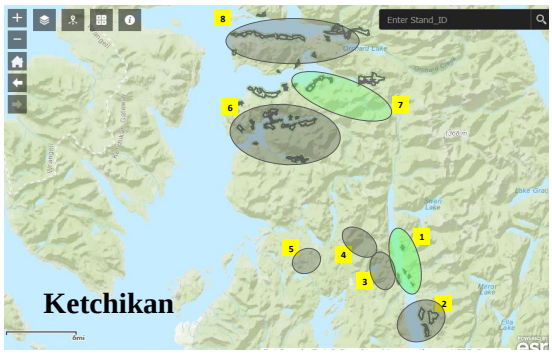

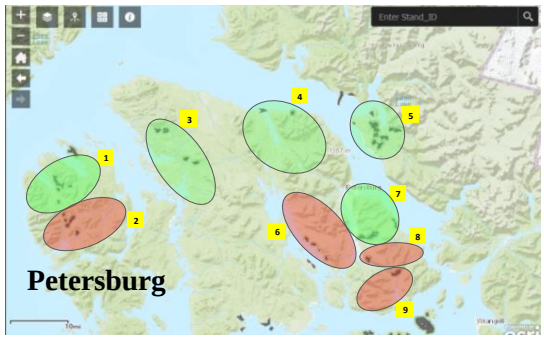

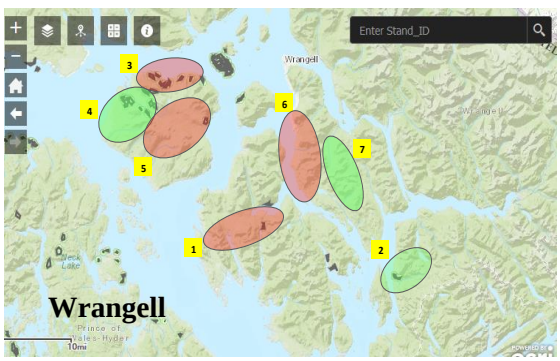

2040 - 2044

Between **78 to 94 mmbf/yr** (15,169 cluster acres; 18,868 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 83% of those acres are contiguous acre clusters of 500 acres or more. 91% of acres are PCT; 9% are non-PCT.

	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of acres in clusters
Total All Supply Areas **Total acres: 18,868** **5-yr total: 472 mmbf** **Total per yr: 94 mmbf** **Acres in cluster areas 500+ contiguous acres: 15,619 acres (83% of total)**	Thorne Bay	Areas: red clusters + 2,6,9,11-13,15 6,189 acres: 155 mmbf 31 mmbf/yr	Cluster areas: 1,3,5,14 _____ 4,762 acres _____ 119 mmbf or 24 mmbf/yr 87% PCT; 13% non-PCT	77%
	Craig	Areas: 1,2 421 acres 10.5 mmbf 2 mmbf/yr	NA	NA
	Ketchikan	Areas: 1,7 529 acres 13 mmbf 2.6 mmbf/yr	NA	NA
	Petersburg	Areas: red clusters + 1,3-5,7 6,122 acres 153 mmbf 30.6 mmbf/yr	Cluster areas: 2,6,8,9 _____ 5,503 acres _____ 137 mmbf or 27 mmbf/yr 90% PCT; 10% non-PCT	90%
	Wrangell	Areas: red clusters +2, 4,7 5,607 acres 140 mmbf 28 mmbf/yr	Cluster areas: 1,3,5,6 _____ 5,354 acres _____ 134 mmbf or 27 mmbf/yr 97% PCT; 3% non-PCT	95%

* = 1) Harvest at 55 years old;
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3) Only young growth stands within 800' of currently open FS roads included for harvest.

** = Cluster acres are contiguous (not scattered) 500 + acre clusters within 800' of open Forest Services roads.

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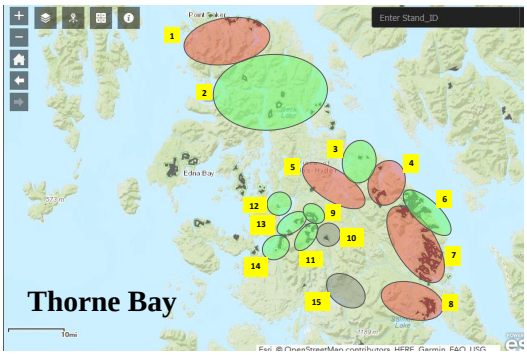
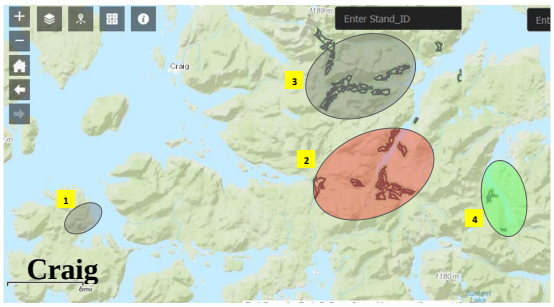
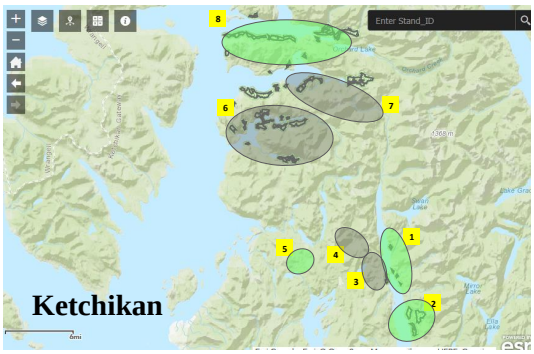
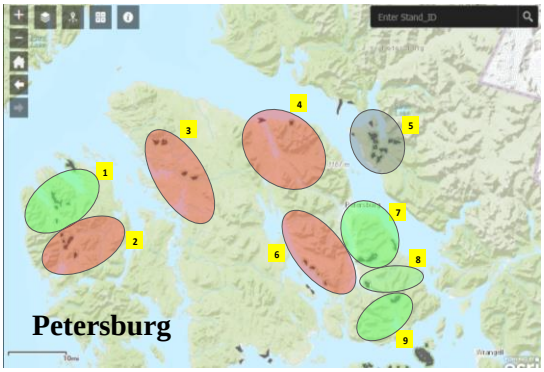
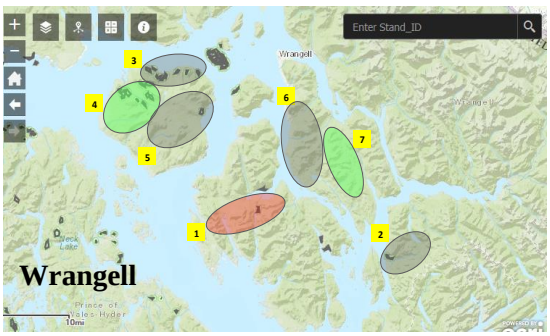










2045 - 2049

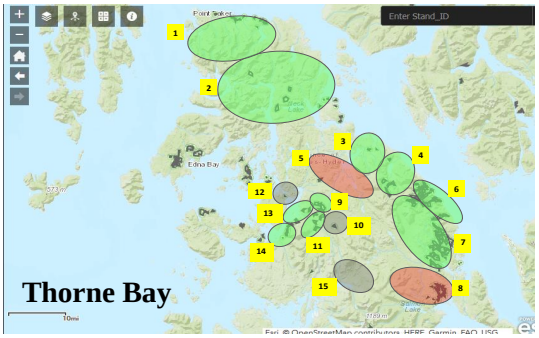
Between **47 to 65 mmbf/yr** (9,442 cluster acres; 13,035 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 72% of those acres are contiguous acre clusters of 500 acres or more. 58% of acres are PCT; 46% are non-PCT.

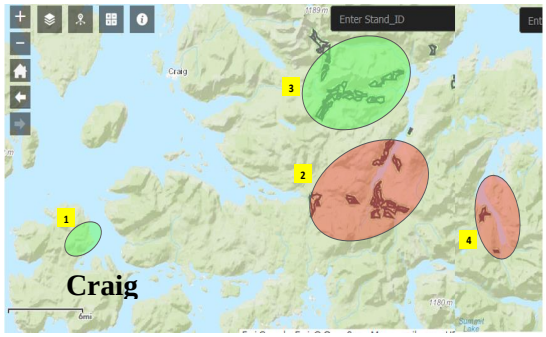
	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of acres in clusters
Total All Supply Areas **Total acres: 13,035** **5-yr total: 326 mmbf** **Total per yr: 65 mmbf** **Acres in cluster areas 500+ contiguous acres: 9,442 acres (72% of total)**	Thorne Bay	Areas: red clusters + 2,3,6,9, 11-14 5,059 acres 126 mmbf 25 mmbf/yr	Cluster areas: 1,4,5,7,8 _____ 4,294 acres _____ 107 mmbf or 21 mmbf/yr 41% PCT; 59% non-PCT	85%
	Craig	Areas: red cluster +4 728 acres 18 mmbf 3.6 mmbf/yr	Cluster area: 2 _____ 497 acres _____ 12.5 mmbf or 2.5 mmbf/yr 10% PCT; 90% non-PCT	68%
	Ketchikan	Areas: red cluster + 1,2,5,8 793 acres 20 mmbf 4 mmbf/yr	NA	NA
	Petersburg	Areas: red clusters + 1,7,8,9 4,547 acres 114 mmbf 23 mmbf/yr	Cluster areas: 2,3,4,6 _____ 3,858 acres _____ 96 mmbf or 19 mmbf/yr 75% PCT; 25% non-PCT	85%
	Wrangell	Areas: red cluster + 4-7 1,908 acres 48 mmbf 9.5 mmbf/yr	Cluster area: 1 _____ 794 acres _____ 20 mmbf or 4 mmbf/yr 71% PCT; 29% non-PCT	42%

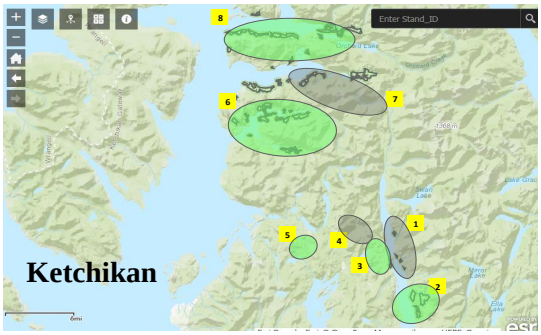
* = 1) Harvest at 55 years old;
2) All environmentally sensitive acres excluded from harvest consideration;
3) Only young growth stands within 800' of currently open FS roads included for harvest.

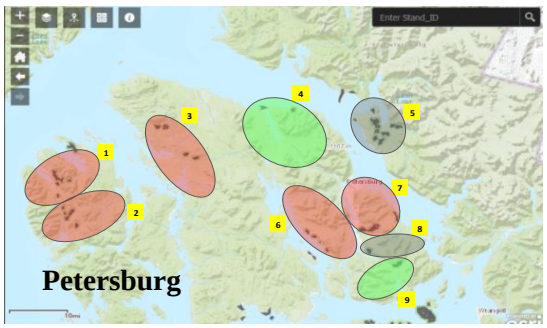
** = Cluster acres are contiguous (not scattered) 500 + acre clusters within 800' of open Forest Services roads.

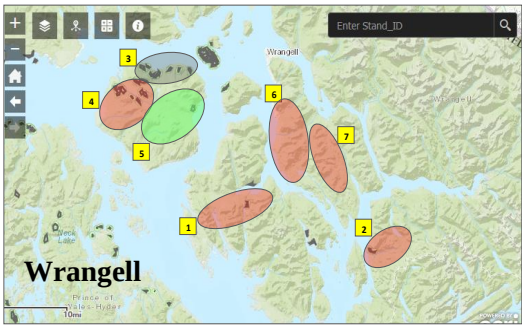
Note: 2020 - 2029 @ 20 mbf/ac
2030 - 2050 @ 25 mbf/ac
Includes 10% netdown for downfall & defect











2050 - 2054

Between **53 to 72 mmbf/yr** (10,571 cluster acres; 14,405 total acres) of merchantable volume from suitable, roaded young growth acres within 800' of open Forest Service roads (no road building required). 73% of those acres are contiguous acre clusters of 500 acres or more. 41% of acres are PCT; 59% are non-PCT.

	Supply Area	Total * (55 yr old harvest)	Total acres in 500 + acre clusters **	% of acres in clusters
Total All Supply Areas **Total acres: 14,405** **5-yr total: 360 mmbf** **Total per yr: 72 mmbf** **Acres in cluster areas 500+ contiguous acres: 10,571 acres (73% of total)**	Thorne Bay	Areas: red clusters + 1-4,6,7,9,10,13,14 3,679 acres 92 mmbf 18 mmbf/yr	Cluster Circles: 5,8 1,480acres 37 mmbf or 7.4 mmbf/yr 42% PCT; 58% non-PCT	40%
	Craig	Areas: red clusters + 1,3 1,921 acres 48 mmbf 9.6 mmbf/yr	Cluster areas: 2,4 1,373 acres 34 mmbf or 6.8 mmbf/yr 28% PCT; 72% non-PCT	71%
	Ketchikan	Areas: 2,3,5,6,8 702 acres 18 mmbf 3.5 mmbf/yr	NA	NA
	Petersburg	Areas: red clusters + 4,9 4,276 acres 107 mmbf 21 mmbf/yr	Cluster areas: 1,2,3,6,7 4,207 acres 105 mmbf or 21 mmbf/yr 43% PCT; 57% non-PCT	98%
	Wrangell	Areas: red clusters + 5 4,005 acres 100 mmbf 20 mmbf/yr	Cluster areas: 1,2,4,6,7 3,632 acres 91 mmbf or 18 mmbf/yr 44% PCT; 56% non-PCT	91%

* = 1) Harvest at 55 years old;
2) All environmentally sensitive acres excluded from harvest consideration;
3) Only young growth stands within 800' of currently open FS roads included for harvest.

** = Cluster acres are contiguous (not scattered) 500 + acre clusters within 800' of open Forest Services roads.

Note: 2020 - 2029 @ 20 mbf/ac
2030 - 2050 @ 25 mbf/ac
Includes 10% netdown for downfall & defect