

# FORESTLAND INVENTORY

## STATE LANDS ON THE KENAI PENINSULA 2024 ASSESSMENT

April 14th, 2025





# Project Overview

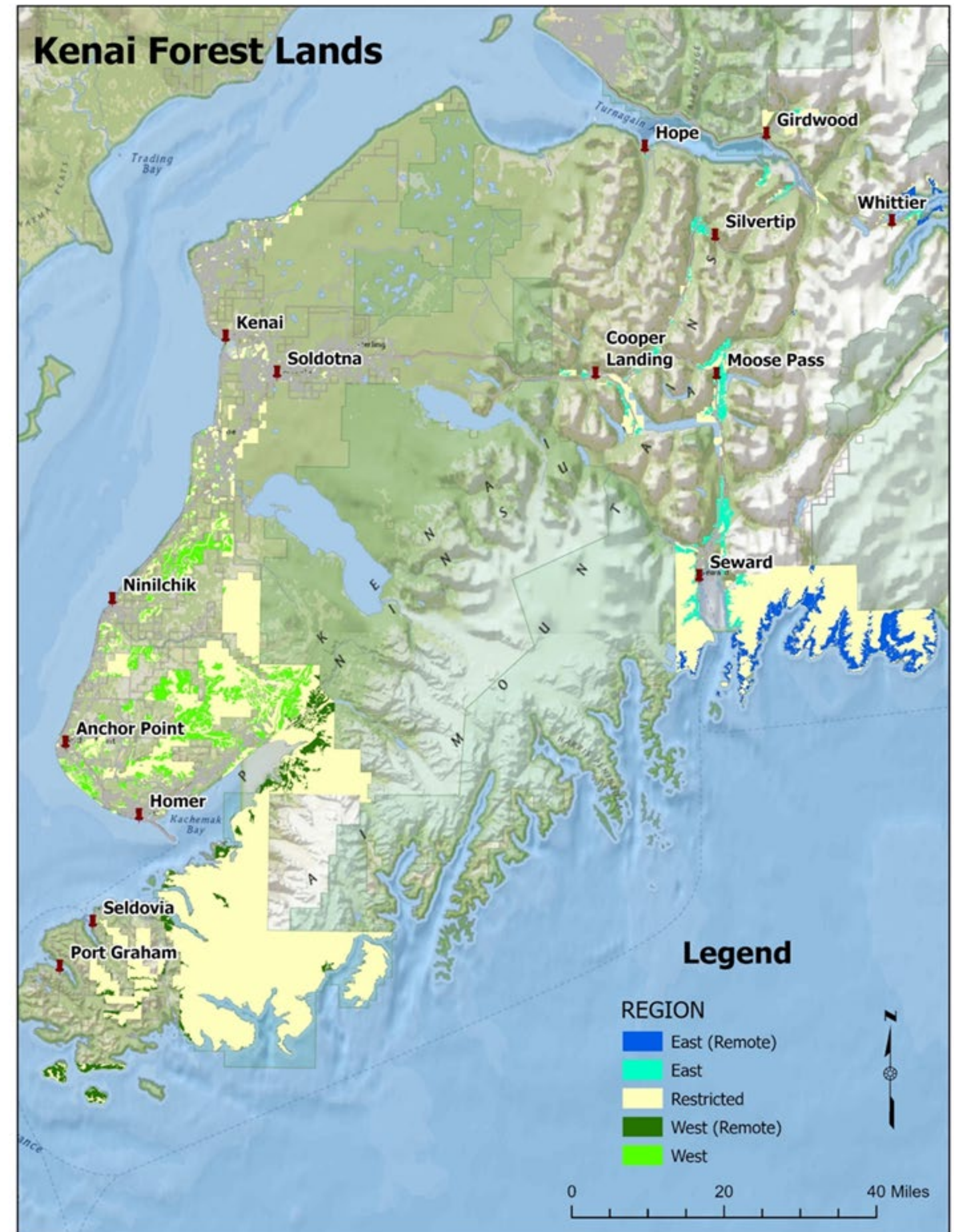
**Objective:** Comprehensive forestland inventory to enhance State's understanding of timber resources and inform management decisions

**Study Area:** 910,899 total acres of State lands on Kenai Peninsula

## Methodology:

- Stratified inventory
- 435 stands cruised with 3,754 sample points
- Field sampling across 7 timber strata
- Post-stratification refinement after detailed land records review

**Key Challenge:** Time constraints required field sampling to commence before completing stratification process





# Land Ownership Mapping Challenges



**Critical Issue:** Lack of reliable ownership mapping significantly affected resource assessment accuracy

## **Impact on Inventory:**

- Field sampling had to begin with publicly available generalized land classification mapping
- Post-completion land records review revealed **substantially more State-owned lands** than initially mapped
- Required comprehensive re-analysis and post-stratification of field data

## **Comparison to Previous Studies:**

- Hanson (2012): 46,780 acres with 832 MBF annual allowable cut
- This study (equivalent "West" region): **70,589 acres with 1,441 MBF** annual cut
- **73% increase** in potential sustainable harvest volume for comparable area

**Lesson Learned:** Accurate land ownership mapping is essential foundation for reliable timber resource assessment

CODE	DESCRIPTION	ACRES	% TOTAL ACRES
ACRES	Total GIS Project acres	910,899	100%
AVAILABLE (Non-Forest)	Non-forest type	417,815	46%
AVAILABLE (NCF)	Available acres in non-commercial forestland	172,323	19%
AVAILABLE (Timber)	Available commercial timbered acres in reportable strata	320,761	35%
Net_Ac_Timber	Available timbered acres net of all restrictions	177,815	20%
SOA_ASR_AC	Agreement, Settlement, Reconveyance	6,259	1%
SOA_ASR_MI		18	0%
SOA_CONV_D	Land Disposal - Conveyed	2,413	0%
SOA_AVAIL_	Land Disposal - Available	18	0%
SOA_LEGIS_	Legislatively Designated Areas	352,826	39%
SOA_MGMT_A	Management Agreement	9,319	1%
SOA_MUNIC_	Municipal Entitlement	37,593	4%
SOA_OTHER_	Other State of Alaska - Acquired	58,070	6%
SOA_INTER_	State Interest Native Allotment	2	0%
SOA_PRO_AL *	Total Not Available/restricted	387,572	43%
Roads	Buffers for roads	29	0%
AWC	Buffers for AWC -Fish bearing streams	10,413	1%
NC	No classification	46,367	5%
		910,899	100%



## Land Classification Summary

• Total Project Area: 910,899 acres

• **Key Finding:** Only 20% of total State lands are available for commercial timber management after accounting for restrictions and buffers

Kenai Region	Net CF	Net BF	Net Tons	Stands	Net Acres
West Total	40,585,686	171,430,366	617,513	1,937	70,589
West Remote Total	27,917,406	127,398,988	418,069	701	23,922
East Total	84,083,027	402,616,106	1,268,835	762	27,716
East Remote Total	196,387,565	989,092,084	2,846,498	721	55,587
<b>Kenai Project Total</b>	<b>348,973,684</b>	<b>1,690,537,544</b>	<b>5,150,916</b>	<b>4,121</b>	<b>177,814</b>

► **Total Net Merchantable Volume (Available Timber):**

- 348,974,000 net cf
- 1,690,538,000 net bf
- 5,150,916 net tons

► **Highest Volume:** East Remote region contains 58% of total timber volume but presents significant access challenges

# Forest Composition & Quality

Position	Explanation	Code	Label	Detail
First 2 digits	Species	WS	White or Sitka Spruce	White Lutz or Sitka
		BS	Black Spruce	Dominant Black Spruce
		MH	Mountain Hemlock	Dominant Mountain Hemlock
		HW	Broadleaf Dominant	Dominant Broadleaf/Hardwood
		MC	Mixed Conifer	Mixed Conifer Dominant
		DD	Dead Conifer	Dead/Burned Conifer
3rd Digit	Tree Size	5	Large Saw	>18 inches DBH
		4	Saw	12-18 inches DBH
		3	Pole	5-11 inches DBH
		2	Saplings	2-5 inches DBH
		1	Seedling	0-1 inches DBH
4th Digit	Stocking	3	Well Stocked	70-100% Crown Closure
		2	Mostly Stocked	40-69% Crown Closure
		1	Poorly Stocked	10-39% Crown Closure
		0	Non-Forest	<10% Crown Closure

# Forest Composition & Quality

	ACRES			STANDS		% Unrestricted area Cruised	# of Plots
	Strata	Unrestricted	Cruised	Strata	Cruised		
1	White Spruce/Sitka Spruce - Saw						
	53,352	19,175	4,810	500	63	25%	609
2	White Spruce/Sitka Spruce - Pole						
	78,412	40,316	7,630	986	85	19%	973
3	White Spruce/Sitka Spruce - Seedlings and Saplings						
	27,880	19,919	1,026	589	31	5%	102
4	Black Spruce - Pole Size or Larger						
	5,413	2,390	1,695	85	18	71%	208
5	Mountain Hemlock - Pole Size or Larger						
	19,645	12,453	7,627	288	78	61%	698
6	Mixed Conifer - Pole Size and Larger						
	129,202	79,949	8,844	1,458	88	11%	826
7	Hardwood/Broadleaf - Pole Size or Larger						
	6,856	3,613	1,153	215	35		152
	Totals						
	320,761	177,815	32,784	4,121	398	18%	3,568



# Market Assessment & Economics



**Current Market:** Small local mills processing ~250 MBF annually for specialty products

## **Stumpage Values (Positive Returns):**

- Spruce: \$170.51/MBF
- Hemlock: \$113.57/MBF
- Firewood: Negative return  
(recommended as purchaser optional)

## **Operating Costs:**

- Logging: \$485.75/MBF
- Hauling: \$141.84/MBF
- Road Building: \$20,000-\$200,000/mile (depending on terrain)

**Key Finding:** Despite challenging operating costs, positive stumpage values demonstrate economic viability under typical conditions



# Sustainable Harvest Potential



**Total Annual Allowable Cut:** 14,172 MBF across all regions (remote regions not shown below)  
**Growth Analysis:** 4.7% average annual volumetric growth rate indicates healthy forest recovery post-beetle outbreak

## West

Description	Acres	Rotation	Acres/Yr	CF/Acre	CF/Yr	BF/Acre	BF/Yr
White Spruce/Sitka Spruce - Saw	6,459	120	54	634	34,114	2,721	146,469
White Spruce/Sitka Spruce - Pole	27,657	120	230	675	155,556	2,797	644,531
White Spruce/Sitka Spruce - Seedlings and Saplings	17,079	120	142	76	10,796	288	41,043
Black Spruce - Pole Size or Larger	2,391	120	20	248	4,932	1,082	21,569
Mountain Hemlock - Pole Size or Larger	0	120	0	0	0	0	0
Mixed Conifer - Pole Size and Larger	16,141	120	135	949	127,632	4,092	550,470
Hardwood/Broadleaf - Pole Size or Larger	862	80	11	722	7,777	3,413	36,757
Total	70,589	-	592	-	340,808	-	1,440,839

## East

Description	Acres	Rotation	Acres/Yr	CF/Acre	CF/Yr	BF/Acre	BF/Yr
White Spruce/Sitka Spruce - Saw	2,980	120	25	3,048	75,683	15,308	380,095
White Spruce/Sitka Spruce - Pole	1,808	120	15	792	11,937	3,416	51,466
White Spruce/Sitka Spruce - Seedlings and Saplings	278	120	2	107	249	394	913
Black Spruce - Pole Size or Larger	0	120	0	0	0	0	0
Mountain Hemlock - Pole Size or Larger	10,120	120	84	3,350	282,517	15,428	1,301,167
Mixed Conifer - Pole Size and Larger	11,362	120	95	3,304	312,816	16,211	1,534,942
Hardwood/Broadleaf - Pole Size or Larger	1,168	80	15	1,797	26,234	8,895	129,828
Total	27,716	-	236	-	709,437	-	3,398,411

# Summary of Commercial Conifer Growth Rates



## Commercial Conifer

	<u>Lutz</u> <u>Spruce</u> %Growth	n	<u>Mtn</u> <u>Hemlock</u> %Growth	n	<u>Sika</u> <u>Spruce</u> %Growth	n	<u>White</u> <u>Spruce</u> %Growth	n	Total %Growth	Total n
East	4.4%	90	4.1%	103	2.8%	294	6.1%	80	3.7%	567
Restricted	6.9%	61	3.5%	24	4.6%	52	6.2%	118	5.8%	255
W_Remote					6.4%	7	5.8%	1	6.3%	8
West	5.6%	86			8.9%	32	5.7%	121	6.1%	239
Total	5.5%	237	4.0%	127	3.6%	385	6.0%	320	4.8%	1069

# Key Recommendations



## Immediate Actions:

- 1. Develop 5-year harvest plan** focusing on accessible high-volume stands
- 2. Prioritize West region** for initial timber sales due to infrastructure proximity
- 3. Invest in road development** to unlock remote timber resources

## Strategic Approaches:

- **Phased development:** Start with most accessible areas to build operational efficiency
- **Market development:** Use consistent supply to attract forest products investment

## Critical Needs:

- Layout of best operational opportunities
- Regular calibration of stumpage calculator using actual harvest results



# Conclusions



## Major Achievements:

- Most comprehensive forest inventory ever completed for State lands on Kenai
- Identified **73% more harvestable timber** than previous assessments
- Developed investment-grade resource information for long-term planning

## Strategic Opportunity:

- Current annual harvest (~250 MBF) represents a fraction of sustainable capacity
- Opportunity to improve forest health and fire resiliency
- Significant potential for expanded forest products industry
- Integration of timber management with recreation and wildlife habitat goals

**Foundation for Future:** Comprehensive datasets provide unprecedented capability for sustainable forest management and economic development planning