



USDA Forest Service
Pacific Northwest
Research Station

The Tongass National Forest Timber Demand Analysis

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Pacific Northwest Research Station

2016 Western Forest Economists meeting

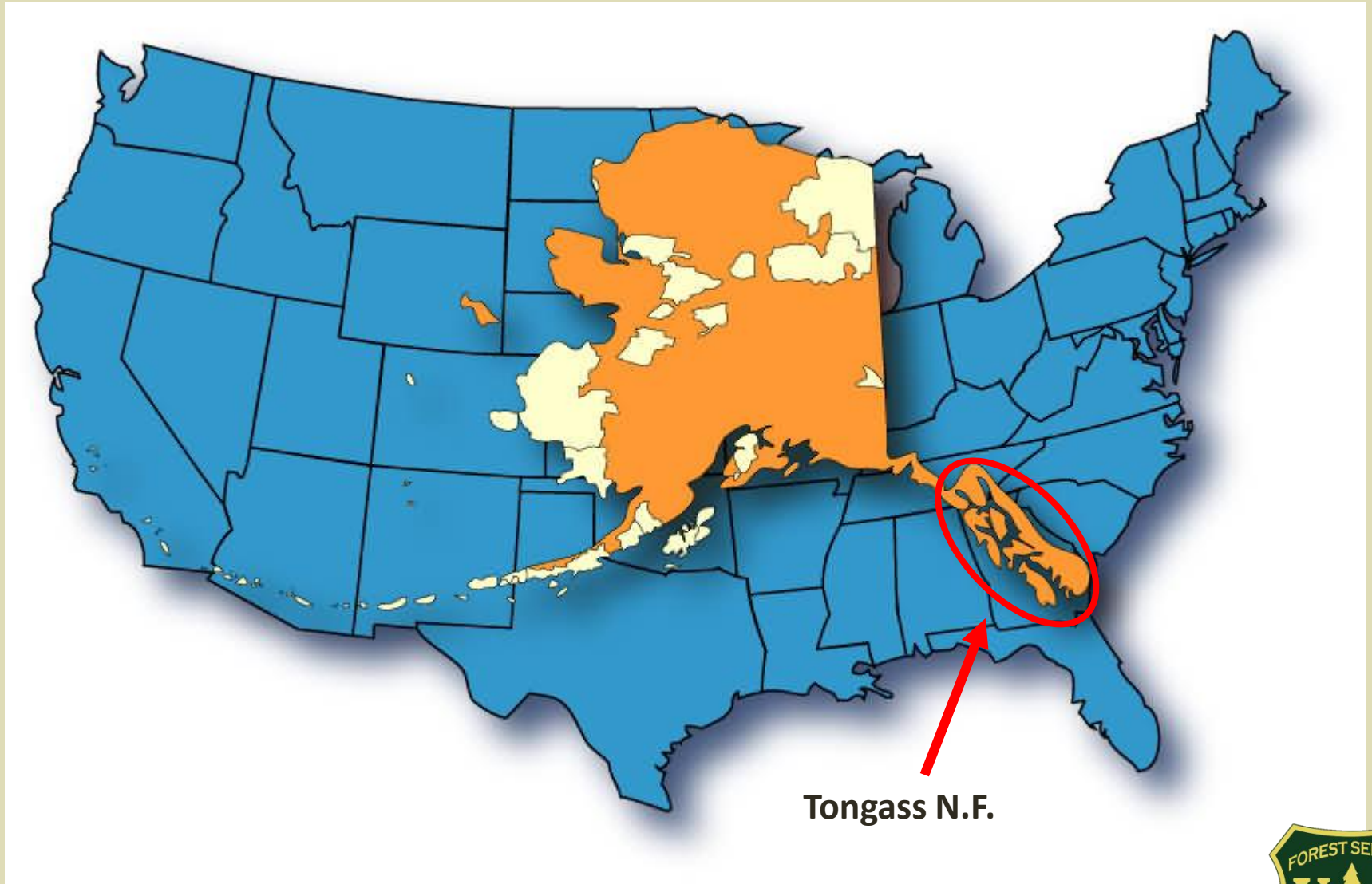
May 3, 2016

Outline

- Background on the Tongass National Forest Plan amendment
- Methodology for the analysis
- Alaska forest industry data
- Scenario results
- Fall out and conclusions



The Tongass National Forest



Tongass N.F.



Secretary's Memorandum 1044-99: Transition to young growth

“The objective of this Secretarial Memorandum is to ensure that USDA, the Chief of the Forest Service, the Alaska Region of the Forest Service, and the Tongass National Forest work together to catalyze a transition from a timber sale program based on old growth to one based on young growth.”

The screenshot shows the USDA Office of the Chief Information Officer website. At the top left is the USDA logo and the text 'Office of the Chief Information Officer' and 'United States Department of Agriculture'. A navigation bar includes links for 'About OCIO', 'CIO Corner', 'Enabling The Business', 'Products and Services', 'Policy Directives, Records, & Forms', and 'For Employees'. Below this is a breadcrumb trail: 'Policy Directives, Records, & Forms | Documents | Secretary's Memorandum 1044-009 old'. The main content area features a heading 'Addressing Sustainable Forestry in Southeast Alaska' and a paragraph of text. Below the text is a 'Downloads:' section with a table of two files.

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Secretary's Memorandum 1044-009 old

Addressing Sustainable Forestry in Southeast Alaska

Alaska's Tongass National Forest is a national treasure. At 17 million acres, the Tongass includes vast old growth temperate rainforests that are increasingly rare globally. The Tongass is also a place that has sustained the people and communities of Southeast Alaska for generations. Whether through providing food and other subsistence uses to the rural communities in the region, supporting cultural practices and identity, drawing people to the region for world-class recreation and fishing, or supporting wood products and other forest-based industries, the Tongass is vital to the economic and cultural well-being of the region. The Forest is also important to the climate; while the Tongass comprises about 2 percent of the Nation's forests, according to one scientific study it contains the equivalent of 8 percent of the carbon sequestered in the forests of the conterminous United States. The Department of Agriculture is committed to maintaining Southeast Alaska's exceptional natural resources in perpetuity. USDA is equally committed to doing its part to ensure that the communities within and adjacent to the Tongass National Forest are economically vibrant. These two goals must go hand in hand.

Downloads:

| Attachment | Size |
|---|-----------|
| Addressing Sustainable Forestry in Southeast Alaska.pdf | 101.03 KB |
| Addressing Sustainable Forestry in Southeast Alaska.htm | 57.95 KB |

USDA.gov | Site Map | Policies & Links | Our Performance | Report Fraud on USDA Contracts | Visit OIG | Plain Writing | Open Gov | FOIA | Privacy Policy | Non-Discrimination Statement | USDA Recovery | USA.gov | Whitehouse.gov | Information Quality Act/Title

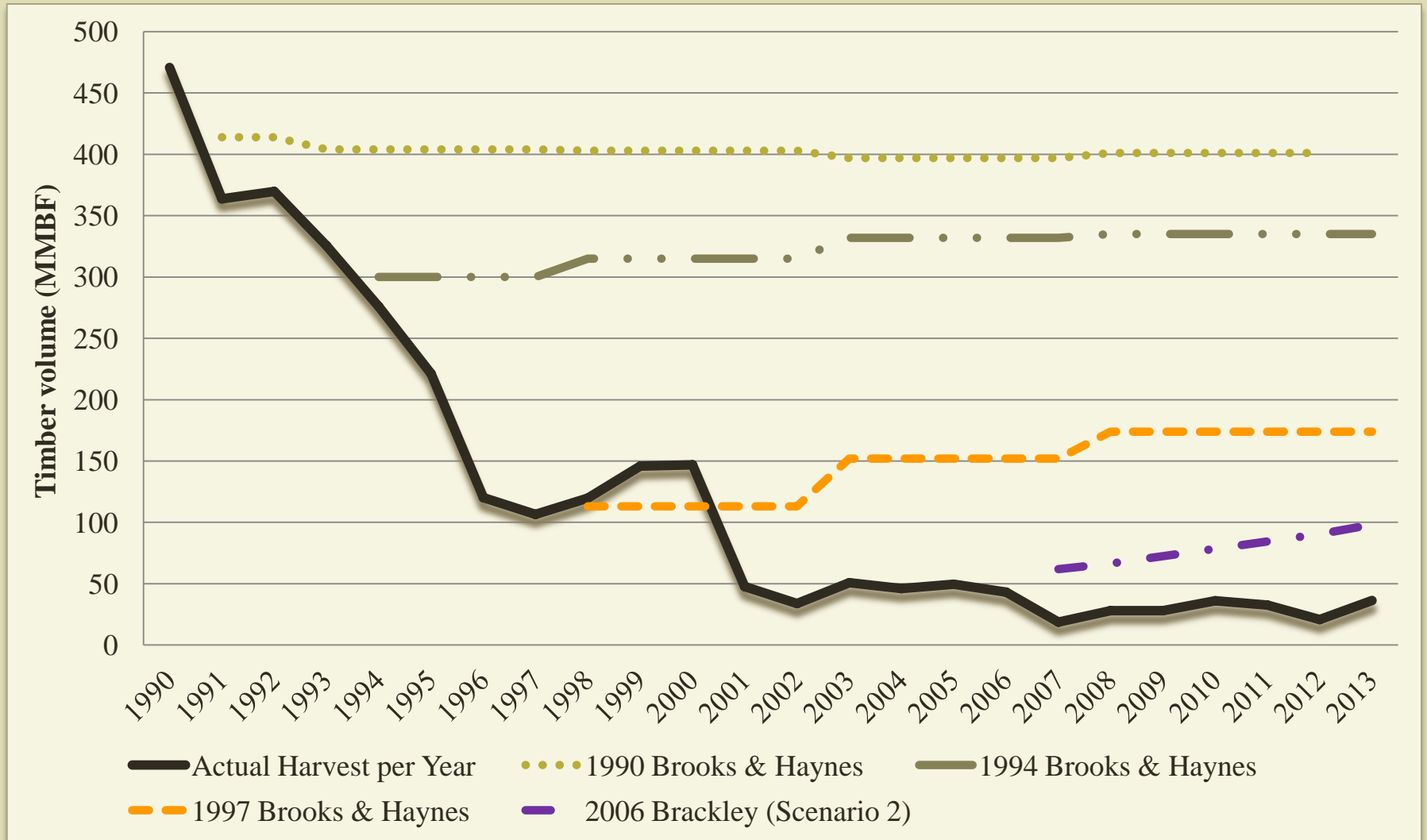


The Tongass Timber Reform Act (TTRA, 1990)

- Mandates that the Secretary of Agriculture will “...**seek to** provide a supply of timber from the Tongass National Forest which (1) **meets** the annual market demand for timber from such forest and (2) meets the **market demand** for timber from such forest for each planning cycle.”
- “seek to meet market demand”
 - Requirement is unique to the Tongass
 - Long term timber demand estimates = best available science
 - PNW Research Station



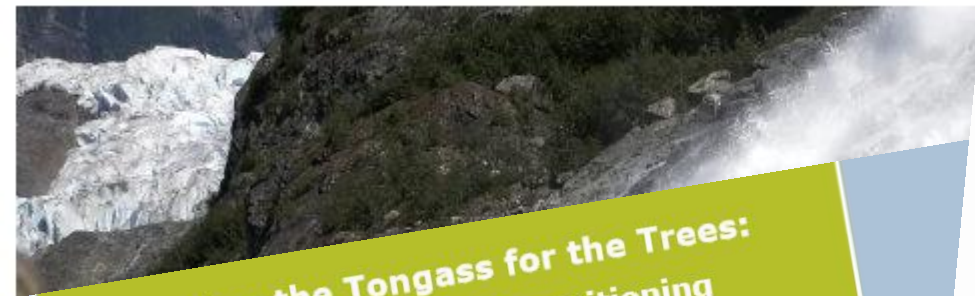
Past projections vs. Tongass harvest



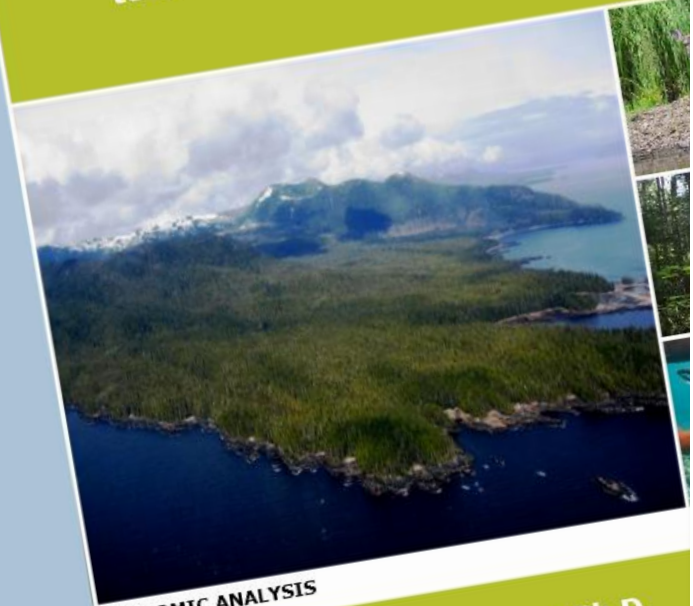
Courtesy of Tom Waldo, Earthjustice

Taxpayers Left Out on a Limb

Timber sales from the Tongass National Forest are public.



Seeing the Tongass for the Trees:
The Economics of Transitioning
to Sustainable Forest Management



ECONOMIC ANALYSIS

Evan Hjerpe, Ph.D.

Big Thorne timber injunction denied

9th Circuit Court says timber sale will proceed - for now

Posted: April 16, 2015 - 9:26pm | Updated: April 17, 2015 - 12:03am

By CHARLES L. WESTMORELAND

JUNEAU EMPIRE

The 9th Circuit Court of Appeals has denied an injunction requested by environmental groups, allowing the Big Thorne timber sale on Prince of Wales Island to move forward Saturday.

The Thursday announcement follows a March appeal by the Southeast Alaska Conservation Council to the 9th Circuit over the U.S. Forest Service's sale of 6,000 acres of old growth and 2,000 acres of new growth forestland to Viking Lumber, one of the last local lumber mills in the region. Plaintiffs asked for the sale to be halted while the appeal is considered.

MAJOR COURT RULING IN TONGASS FOREST CASE

Forest Service doubled market demand for timber

0 0

August 5, 2005

Juneau, AK — The Ninth Circuit Court of Appeals today ruled that the Forest Service must correct serious problems in the 1997 Tongass National Forest Land Management Plan. The challenge to the 1997 Forest Plan by conservation organizations centers on the impact of a Forest Service error that doubled its projections of market demand for Tongass timber. Market demand projections were used to determine the maximum logging level allowed in the 1997 Forest Plan. The overall effect of this error was to exaggerate Tongass logging levels, and put much more land in logging designations than the agency's own economists found was necessary to supply local mills.

"This is a victory for all Americans because it will give people a chance to see our biggest and most wild national forest in its natural state," said Earthjustice attorney Tom Waldo.



Our goals:

- Estimate demand for Tongass timber
- Develop market model that is:
 - Conservative
 - Replicable
 - Material balanced
 - Easy to use and understand today
 - Easy to use and understand for future analyses
 - The best available science for TLMP amendment
 - Publish results

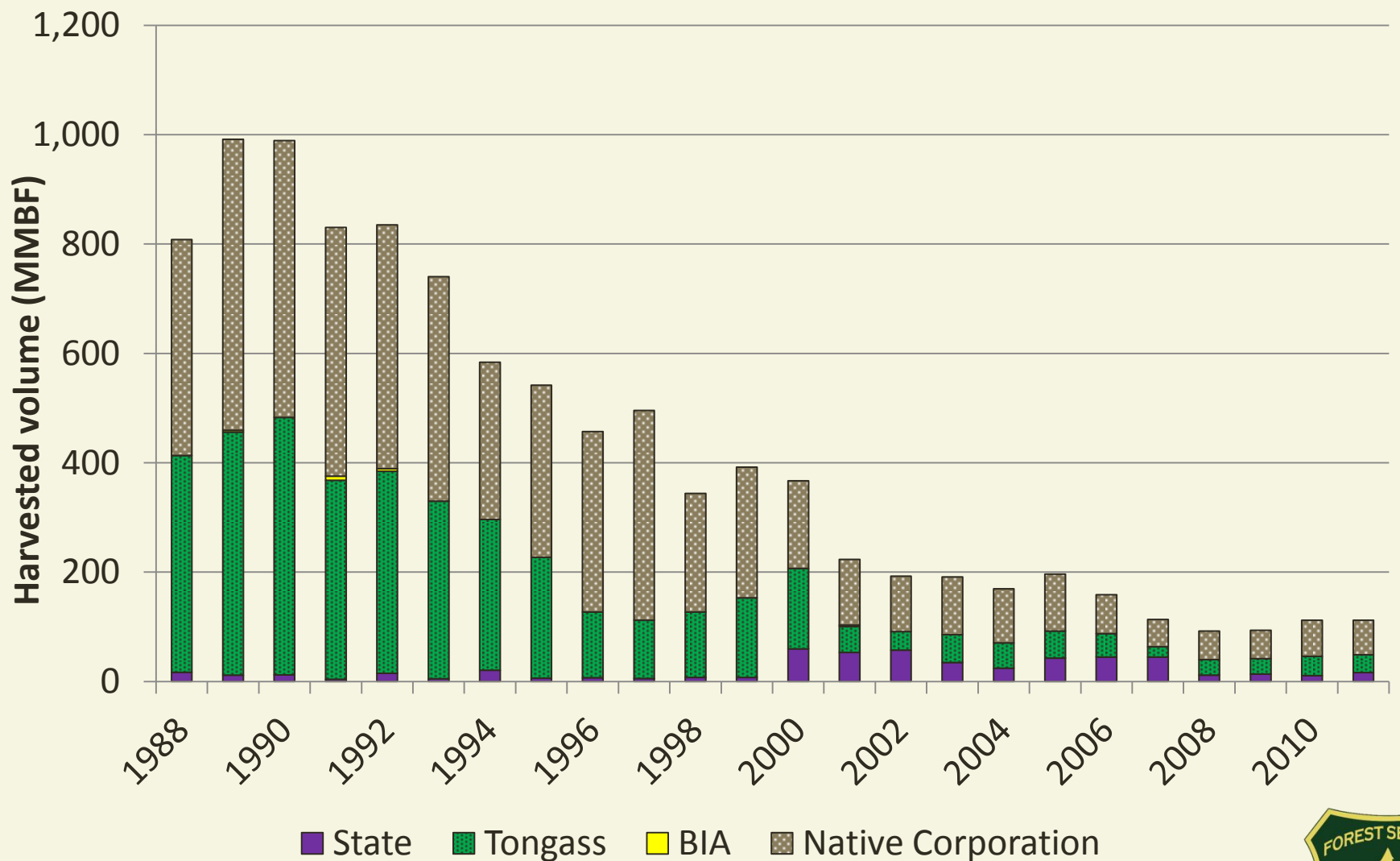


The plan: estimate timber demand using timber product output methodology

- Identify product markets
- Assemble historic product data
- Project product data and market share over planning cycle (2015 to 2030)
- Develop baseline model and 3 management scenarios
 - 1. YGT
 - 2. YGT + wood energy
 - 3. YGT + housing recovery
- Estimate volume of demand for products
- Estimate harvest equivalent to meet demand
 - **Tongass National Forest**
 - **Native Corporation**
 - **State of Alaska**



Southeast Alaska harvest by owner



Source: ANILCA 706(a) reports on file with Region 10 economist

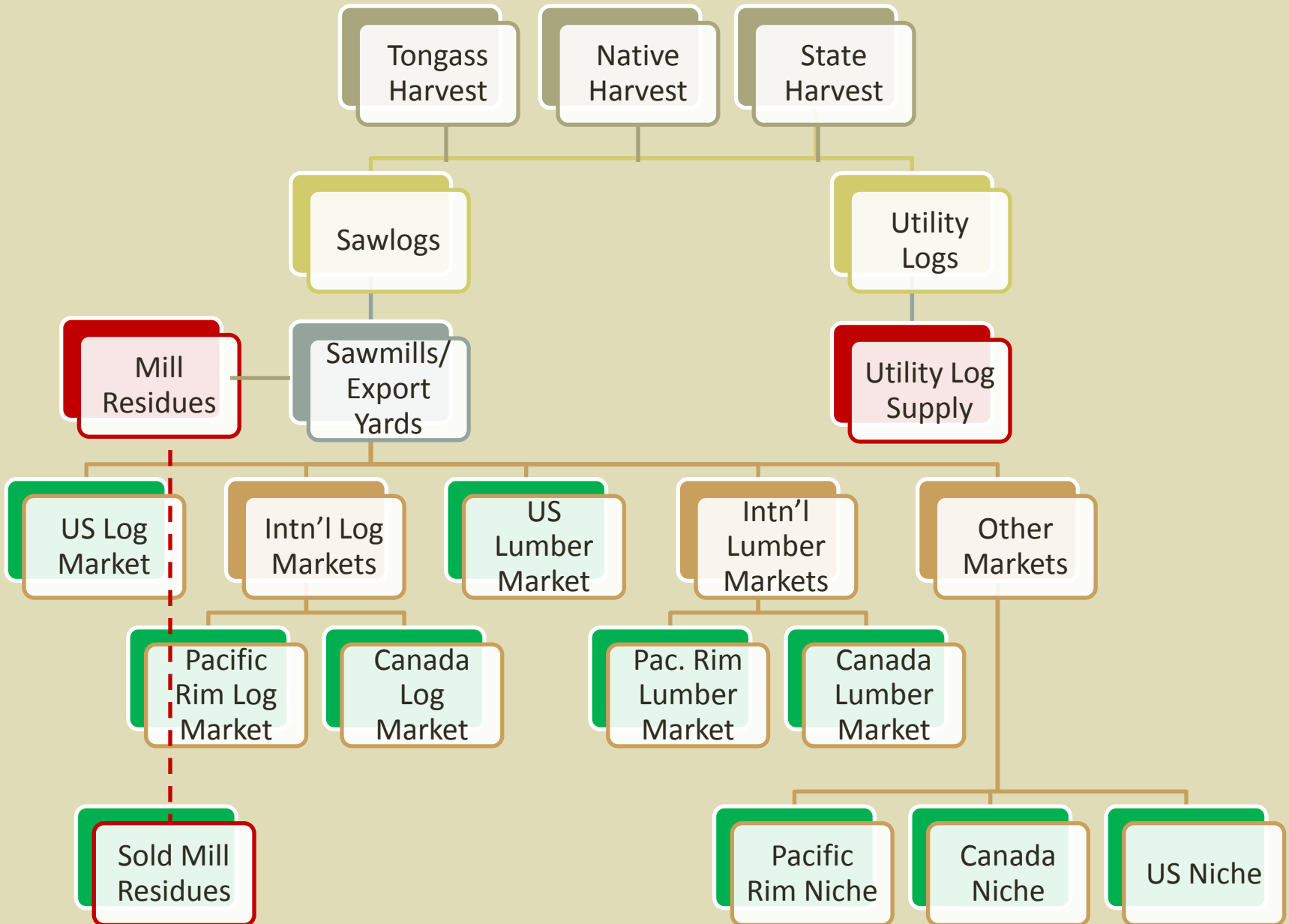


Identifying markets: Alaska forest industry data

- USFS annual survey of southeast Alaska sawmills since 2000
 - Same 20 mills-half have closed
 - No log exports
 - No residue estimates
 - No niche products
- Timber Product Output reports, 2005 & 2011
- Tongass log export permits
- USITC trade database: softwood log, lumber, residue exports by destination
- FAOSTAT
- Southeast Alaska timber harvest by owner
- Conversion and lumber recovery factors



Southeast Alaska wood product markets



Historic market data set (units; source)

| | Softwood logs <small>(MBF log scale; R10 reports, Tongass export permits)</small> | | | Softwood lumber <small>(MBF log scale; Parrent)</small> | | | Niche products <small>(MBF; BBER)</small> | | | Sold residue <small>(BDU, BBER)</small> | Harvested utility logs <small>(MBF log scale; R10 reports)</small> |
|------|--|--------|--------|--|--------|--------|--|--------|-------|--|---|
| Year | Pacific Rim | Canada | U.S. | Pacific Rim | Canada | U.S. | Pacific Rim | Canada | U.S. | | |
| 2002 | 118,940 | 1,500 | 9,460 | 6,533 | 480 | 32,689 | | | | | 21,200 |
| 2003 | 114,480 | 600 | 10,210 | 5,274 | 383 | 26,349 | | | | | 16,400 |
| 2004 | 107,830 | 0 | 10,600 | 4,056 | 5,951 | 21,022 | | | | | 14,600 |
| 2005 | 133,360 | 0 | 13,830 | 5,181 | 724 | 28,549 | 0 | 0 | 1,429 | 37,199 | 13,000 |
| 2006 | 92,710 | 0 | 9,210 | 5,144 | 296 | 26,658 | | | | | 8,800 |
| 2007 | 72,380 | 400 | 4,904 | 5,246 | 708 | 25,712 | | | | | 12,800 |
| 2008 | 52,609 | 0 | 5,940 | 5,464 | 0 | 17,958 | | | | | 12,400 |
| 2009 | 63,591 | 0 | 4,969 | 5,416 | 0 | 8,006 | | | | | 9,700 |
| 2010 | 75,376 | 0 | 6,290 | 4,307 | 0 | 11,501 | | | | | 10,500 |
| 2011 | 73,941 | 0 | 11,091 | 3,798 | 0 | 7,748 | 50 | 15 | 299 | 16,181 | 8,100 |
| 2012 | 87,692 | 0 | 6,527 | 3,644 | 0 | 10,198 | | | | | 7,960 |

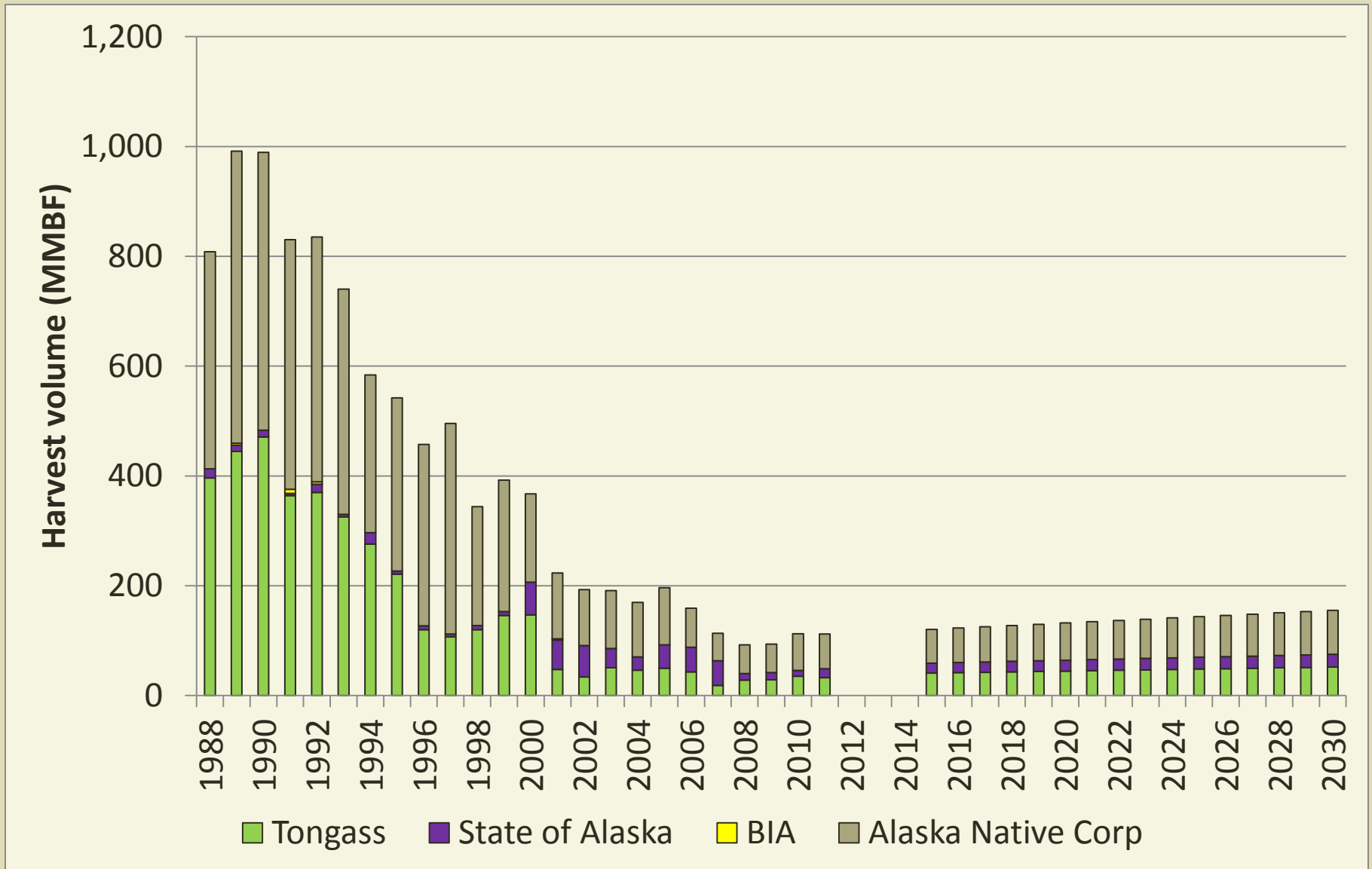
Projecting identified markets

- Trend-based approach
 - Identify relevant time period(s)
 - Calculate annual market growth
 - Project market volumes from 2015 to 2030 to create baseline model
 - Easy to explain to a general audience
 - Transparent, defensible, and easy to implement
 - Excel based spreadsheet = no specialized software required
- Market share
 - US share
 - SEAK share of US flow
 - Tongass, State, Native Corp harvest share of SEAK share

Baseline model: harvest by industry MMBF log scale

| Year | Sawlog exports | Sawmills | Utility Logs | Residue | Niche | Total |
|-------------|----------------|----------|--------------|---------|-------|---------|
| 2015 | 84,544 | 14,797 | 7,540 | 12,841 | 897 | 120,619 |
| 2016 | 86,633 | 14,992 | 7,400 | 13,000 | 897 | 122,922 |
| 2017 | 88,721 | 15,188 | 7,260 | 13,160 | 897 | 125,226 |
| 2018 | 90,810 | 15,383 | 7,120 | 13,320 | 897 | 127,529 |
| 2019 | 92,898 | 15,578 | 6,980 | 13,480 | 897 | 129,833 |
| 2020 | 94,987 | 15,773 | 6,840 | 13,639 | 897 | 132,136 |
| 2021 | 97,075 | 15,969 | 6,700 | 13,799 | 897 | 134,440 |
| 2022 | 99,164 | 16,164 | 6,560 | 13,959 | 897 | 136,743 |
| 2023 | 101,252 | 16,359 | 6,420 | 14,118 | 897 | 139,047 |
| 2024 | 103,341 | 16,554 | 6,280 | 14,278 | 897 | 141,350 |
| 2025 | 105,429 | 16,749 | 6,140 | 14,438 | 897 | 143,654 |
| 2026 | 107,518 | 16,945 | 6,000 | 14,598 | 897 | 145,957 |
| 2027 | 109,607 | 17,140 | 5,860 | 14,757 | 897 | 148,261 |
| 2028 | 111,695 | 17,335 | 5,720 | 14,917 | 897 | 150,564 |
| 2029 | 113,784 | 17,530 | 5,580 | 15,077 | 897 | 152,868 |
| 2030 | 115,872 | 17,726 | 5,440 | 15,237 | 897 | 155,171 |

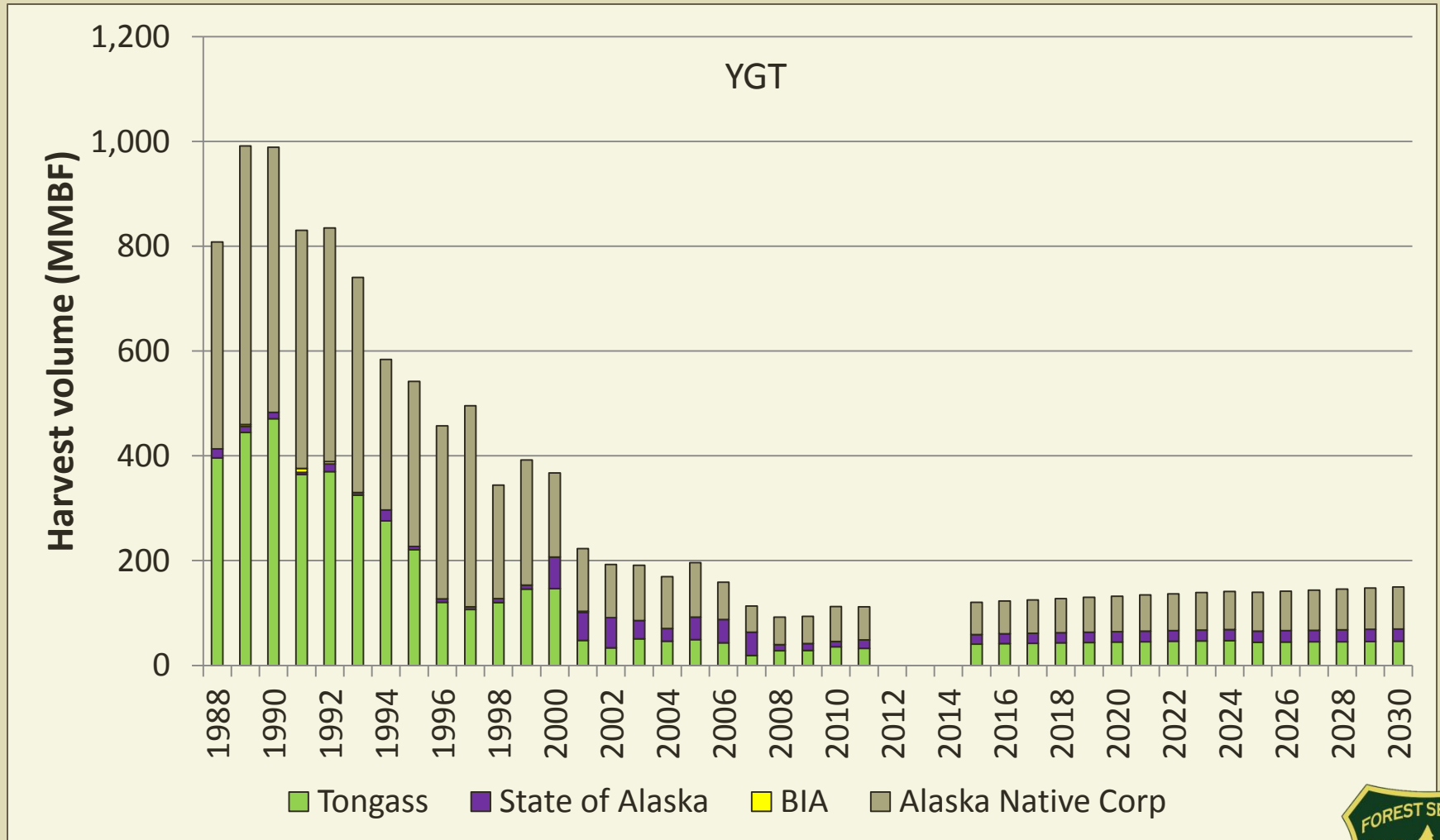
Baseline model, harvest results



Scenario 1: Young growth transition (YGT)

- Assumptions
 - Transition occurs in 2025
 - Switch will impact shop and board grade lumber production and markets
 - Log exports continue at 5- year average
 - 5 MMBF annual old growth harvest for niche markets
 - Southeast Alaska producers lose market share in Pacific Rim lumber markets
- Loss of demand in Pacific Rim lumber markets will reduce harvest from the Tongass and leave the harvest from Native or State timberlands unchanged from the baseline.

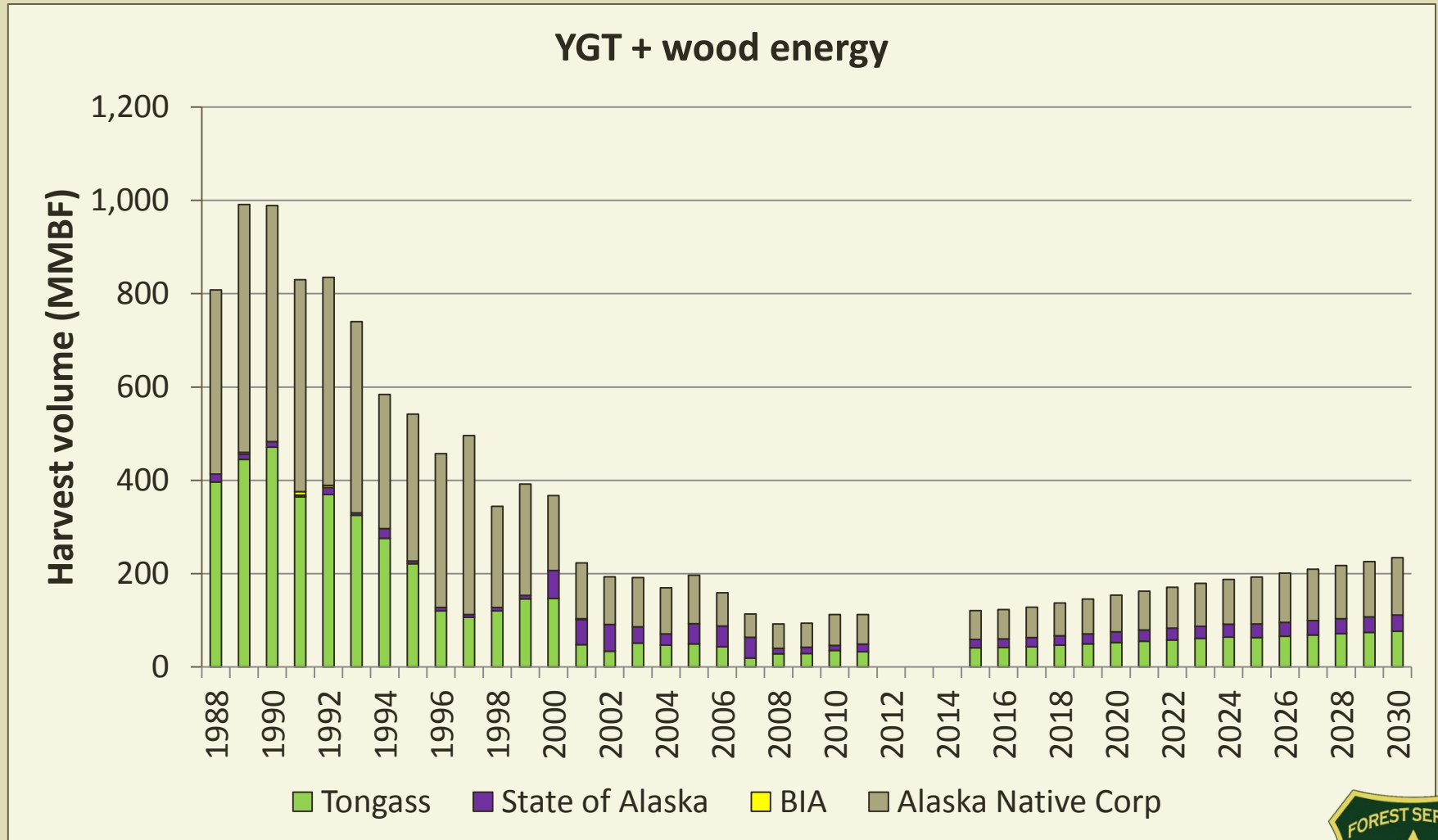
Scenario 1 results



Scenario 2: YGT + wood energy

- Policy goal: The 30% question
 - Conversion of 30% of distillate fuel use in SE Alaska to wood energy
- Assumptions:
 - Phase in 5% of goal per year starting in 2015
 - New equipment is 65% efficient
 - Unsold residues and utility grade logs are available for energy
 - If needed, additional harvested material will be utility grade
- Conversion goal:
 - 4.7 trillion BTU (in 2012) x 30% = **1.4 trillion BTU goal**
 - **1.4 trillion Btus = 70.8 billion Btus annually**
 - 1.4 trillion BTU \approx **132,000 MBF**
- 30% goal was not met at this pace.

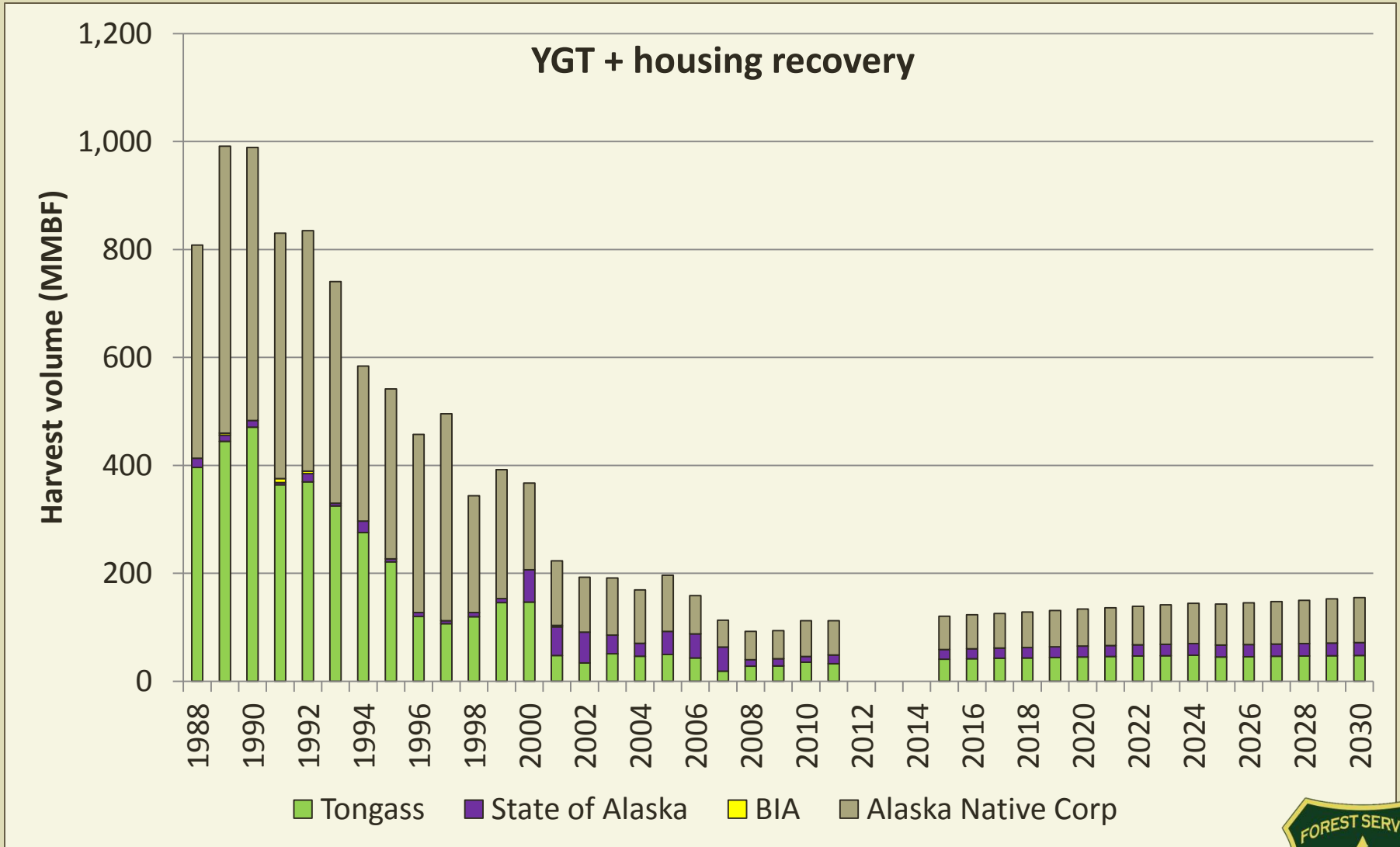
Scenario 2 results



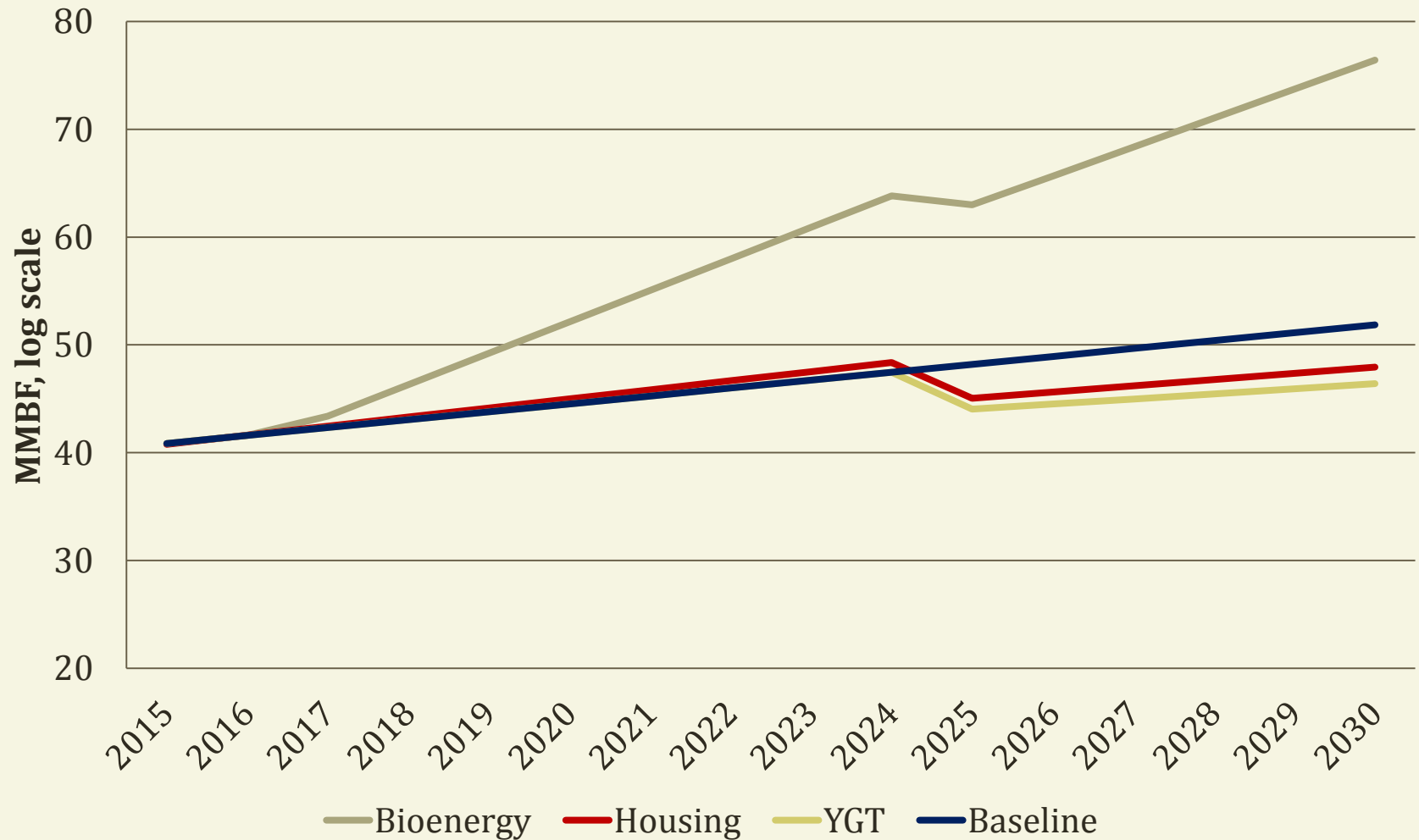
Scenario 3: YGT + U.S. housing recovery

- Assumptions
 - US housing markets rebound to pre-recession levels
 - Domestic lumber demand grows at pre-recession rate through the entire projection period.
 - Domestic log demand rises to meet demand for lumber
 - Market share of southeast Alaska producers remains constant

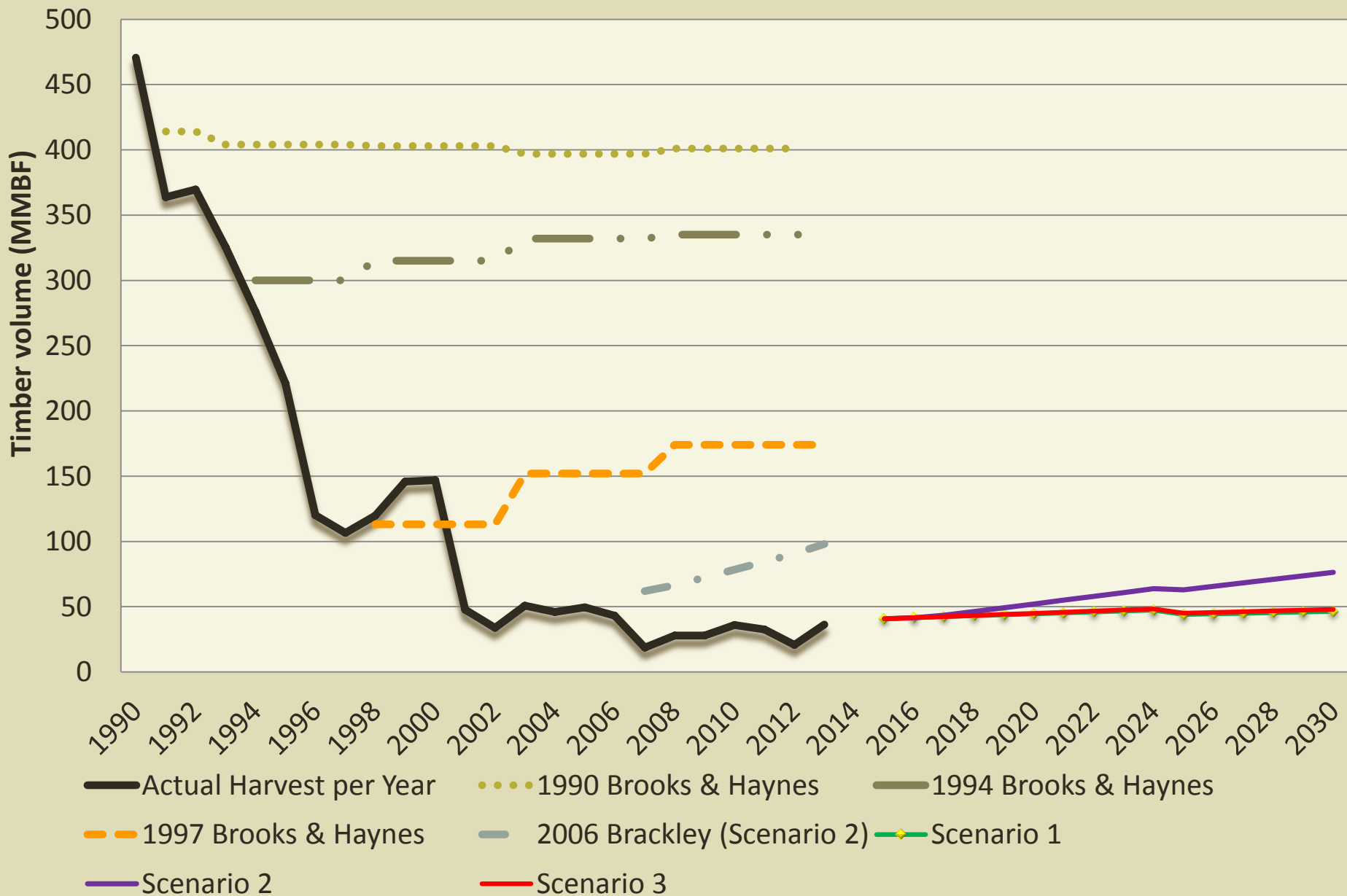
Scenario 3 results



Tongass harvest results for each scenario



Daniels et al. Tongass harvest results



The project has generated a lot of interest

- Portland-area stakeholders



- Political representatives



- Consultants

- Other agencies



- Media



Other noteworthy findings: softwood log trade data discrepancies

United States International Trade Commission

Main Menu Version 3.1.0

Create a New Query/Report:

Select Trade Type: U.S. Imports For Consumption
 U.S. Domestic Exports
 U.S. General Imports
 U.S. Total Exports
 Trade Balance

Select Classification System for List and Display

Try This First!
 Includes HTS, SIC, SITC, End-use, AG codes, and pre-defined country groups. Fast and easy!

QUICK QUERY

Advanced Searching
 ONLY for using customized product or country lists:

HTS ITEMS
 SIC CODES
 SITC CODES
 NAIC CODES
 EXPERT MODE

Select Years for Trade Data

Years:
 Current U.S. Trade (1996-2015)
 Historical Data (1989-1995)

Proceed With New Query

Note: To start a new query click on "Proceed With New Query".

Run a report from a saved query:

Select User Saved Queries:
 8digitchips89-95
 8digitchips96-2011
 8digitdwdlumber89-95
 8digitchips89-95
 1108digitchips89-95

Download Report Directly to Excel:

 (This will create an Excel file from your saved query.)

Run Report From Saved Query

Delete Saved Query

Account Information

Modify User Account

Click the "Modify User Account" to change your password or email address.

| Year | AK log exports, USITC MMBF | SEAK harvest, MMBF |
|------|----------------------------|--------------------|
| 2005 | 213.5 | 196.3 |
| 2006 | 249.7 | 158.9 |
| 2007 | 197.6 | 113.3 |
| 2008 | 187.9 | 92.2 |
| 2009 | 204.9 | 93.7 |
| 2010 | 280.9 | 112.3 |
| 2011 | 275.9 | 112.0 |
| 2012 | 292.1 | 84.4 |
| 2013 | 276.9 | 99.4 |

Conclusions

- Alaska timber industry data are problematic
- Log exports >85% of harvest
 - Discrepancy in trade statistics
 - Conversion factors
- Lumber markets
 - Pacific Rim lumber demand
 - Challenging to compete in commodity markets
- Niche products <2% of harvest but of great interest to stakeholders
- Draft EIS: released 11/20/2015
- **DEIS public comments: 260,000 +**



Acknowledgements:

Co-authors: Mike Paruszkiewicz and Susan Alexander

USFS Alaska Region

Tongass National Forest

University of Montana, BBER

PNW FIA



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