



Future Forest Prospects: Look Back to *See Forward*

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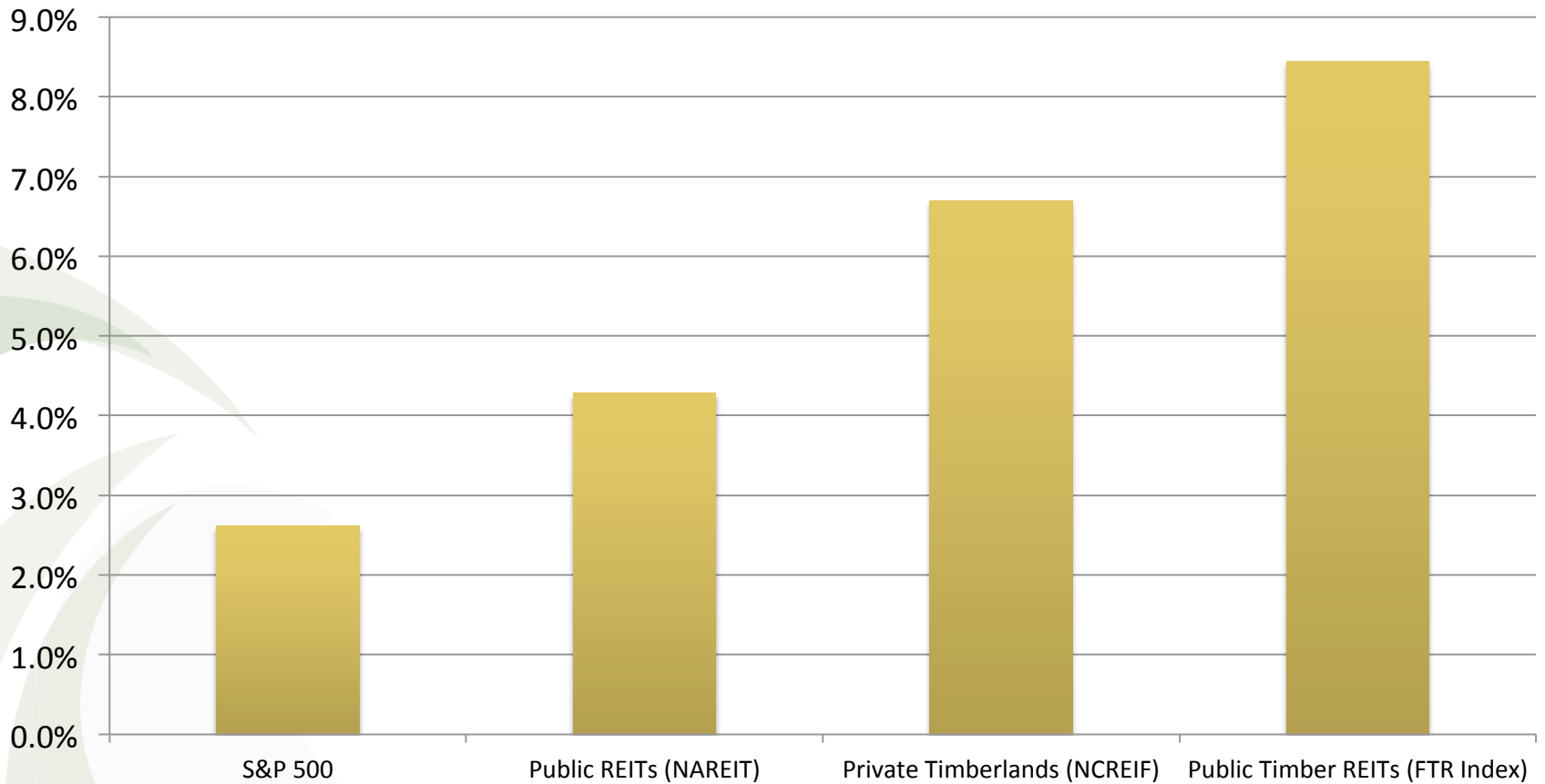
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Factors driving capital differ across sectors.

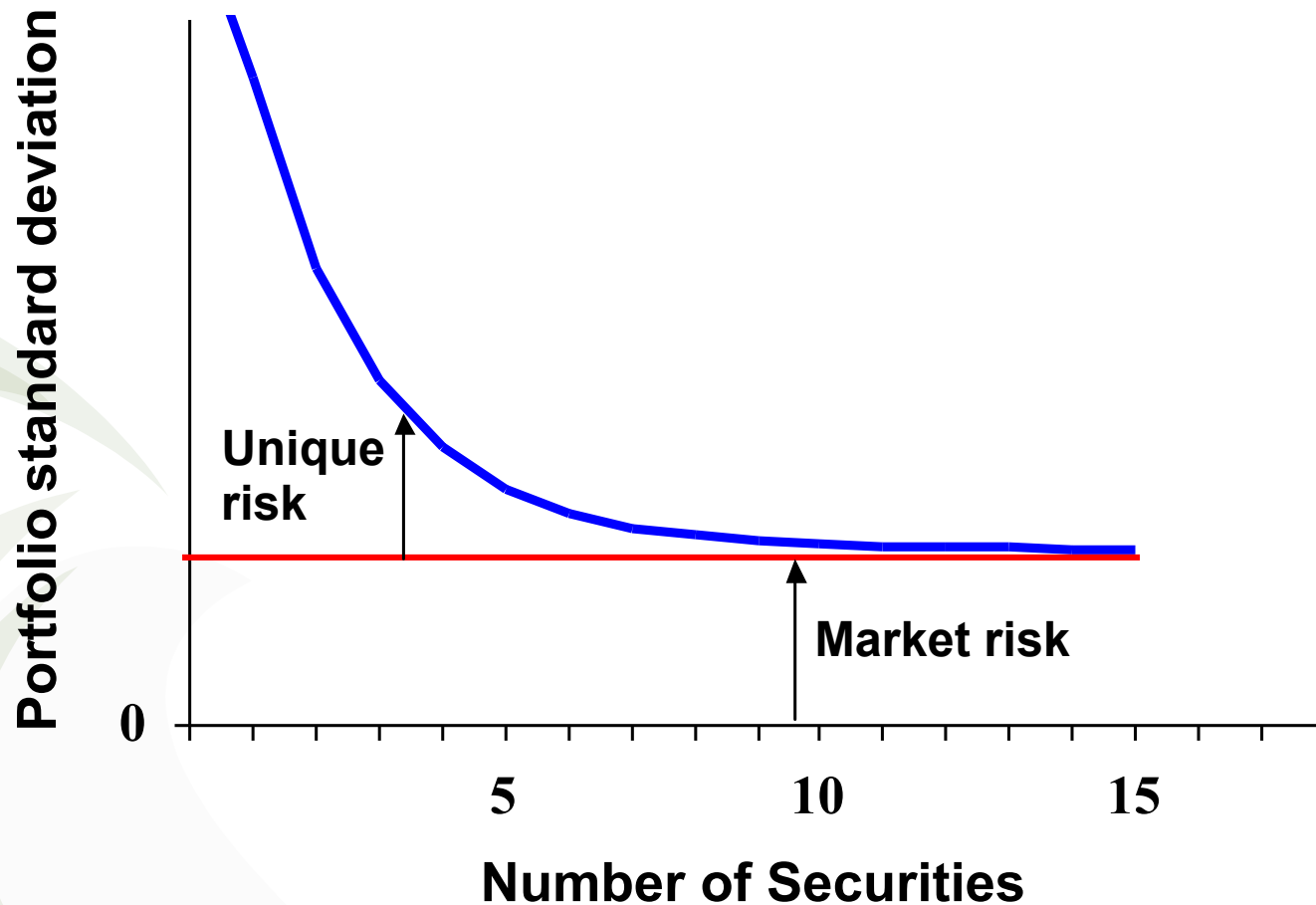
- Timberland
 - Risk-adjusted returns and diversification
- Bioenergy
 - End markets
- Wood-Using Manufacturers
 - Return on assets (ROA)

Annualized Returns

2000 - 2013



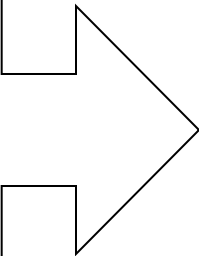
For stocks: diversify with 10+ stocks.
For timberlands: diversify with 3+ tracts.



US-based investors in international timberlands have specific concerns.

- Forisk conducted research on behalf of Colombia's Ministry of Agriculture and Rural Development
 - Mendell, B.C., T. Sydor and A.H. Lang. U.S. investor perspectives of international timberland investments and Colombia, *International Forestry Review*, 13(4): 1-5.
- 83% of TIMOs had strong interest in international assets. Interest tempered by two categories of questions and concerns:
 - International/country risks
 - Includes political stability, property rights, tax regulations, and exchange rates
 - Forest asset quality and market risks
 - Includes volume risk, demand and prices for wood, and forest industry capacity

% of TIMOs who identified these issues as critical to evaluating potential international timberland investments



Political stability	83%
Markets for wood	83%
Property rights	75%
Legal structure/ contracts	67%
Tax regulations	58%
Exchange rates	58%
Repatriation of capital	25%
Available timberlands	25%
Volume risk	25%
Liquidity of land market	25%

Key insights from previous research and investment execution:

- While approaches to evaluating investments differ, the key concerns are similar.
 - Country risk: factors assessing health of investment climate.
 - Data.
- Wide range of risk tolerances across investors.
 - Risk for one is opportunity for another.
- Comfort with doing business in the country more important than forest asset quality.
 - Step 1: TIMO/investor gets comfortable.
 - [Step 2: TIMO helps clients get comfortable.]
- Exchange rates (ER) poorly understood.

Investors “build up” DRs for overseas timber.

Element	Description
Base/Benchmark	Cost of capital or minimum hurdle rate for the allocation
Country risk	Sovereign/political risk Start with spread between US/country treasuries Accounts for regulatory concerns
Market risk	Maturity, diversity and access to wood markets % domestic versus export % growth rates of domestic wood demand
Firm/Client risk	Execution risk Most relevant for first and/or greenfield investments Client specific; can vary over time with staggered DRs

Accounting for (1) client experience and (2) risk tolerance directly influences applied discount rates.

Real DRs for overseas timberlands can vary over time as experience and transparency increases.

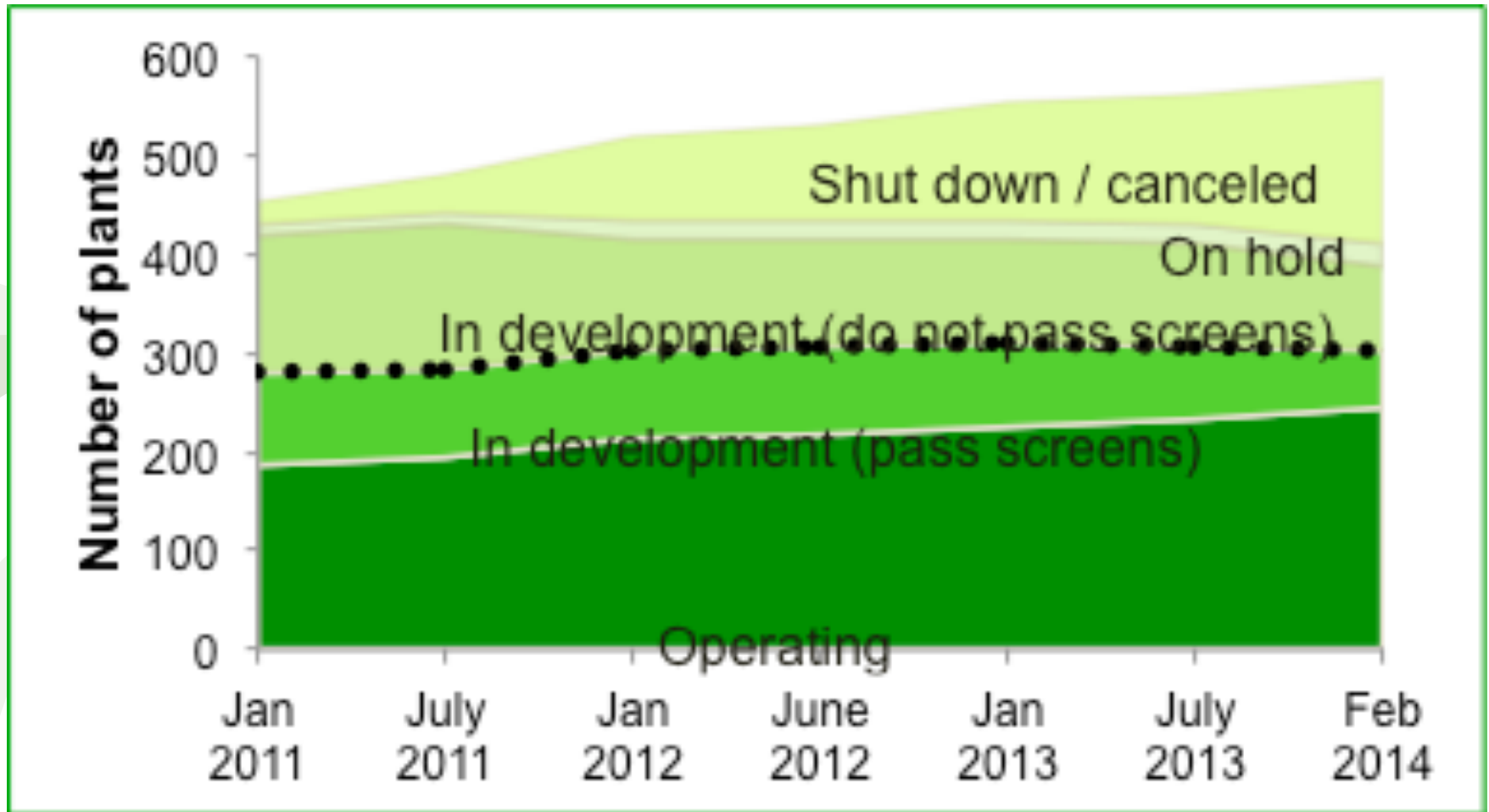
Element	US South	New Zealand	Colombia (Phase 1)	Colombia (Phase 2)
Base	5%	5%	5%	5%
Country	0%	1.5%	2.5%*	2.5%
Market	0.5 – 1.5%	1 – 2%	1.5 – 3.5%	1.5 – 3.5%
Firm/Client	0%	-1.5%	1 – 3%	0 – 1%
Estimate	5.5 – 6.5%	6 – 7%	10 – 14%	9 – 12%

*Current spread is 5%; assuming normalized spread with U.S. treasuries

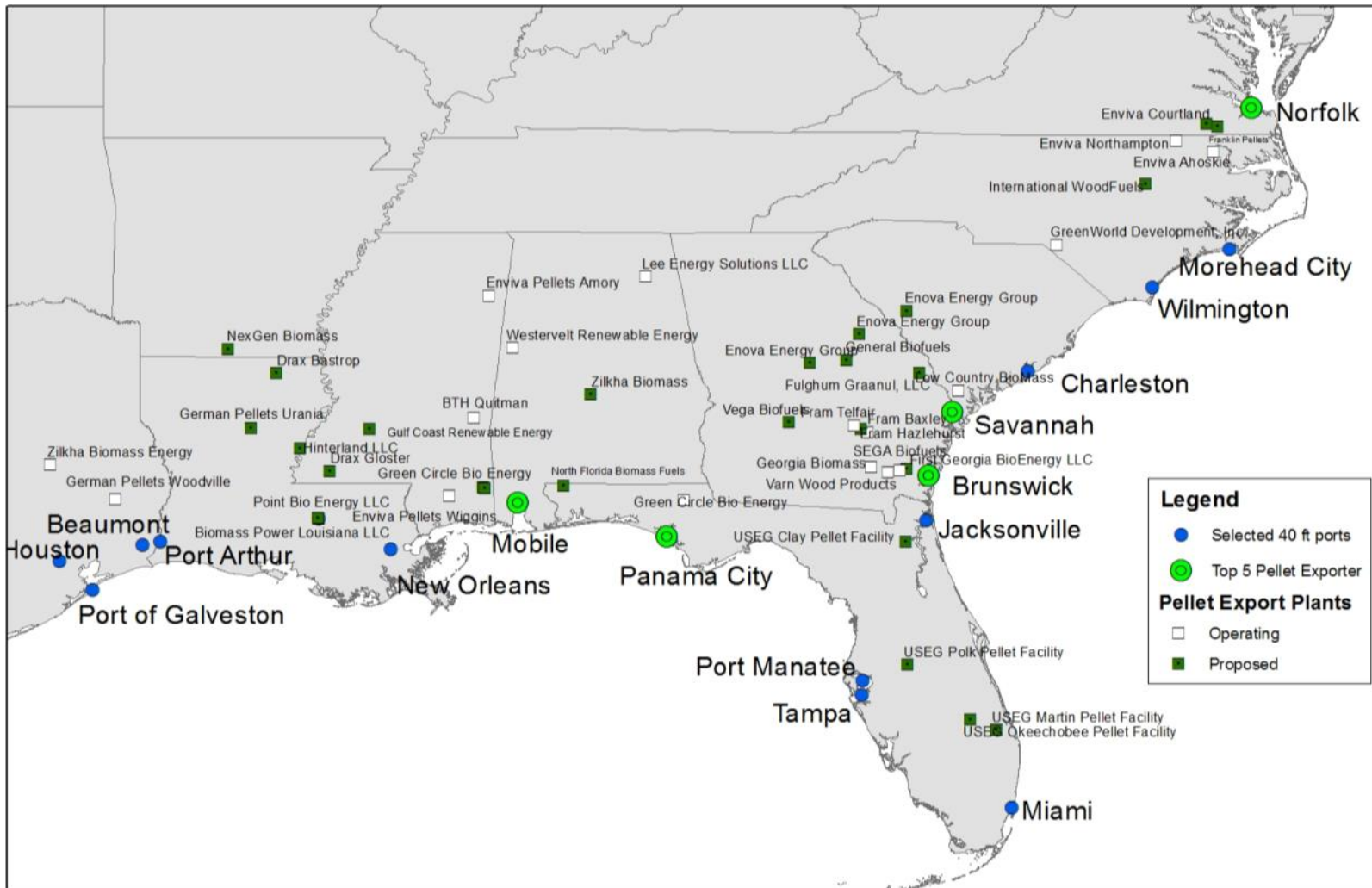
Actual/applied real DRs between 2005 and 2010

- Australia: 5.4 – 9.3%
- Colombia: 10.0 – 15.0% (2008+)
- New Zealand: 6.1 – 8.7%
- Uruguay: 6.5 – 8.5%

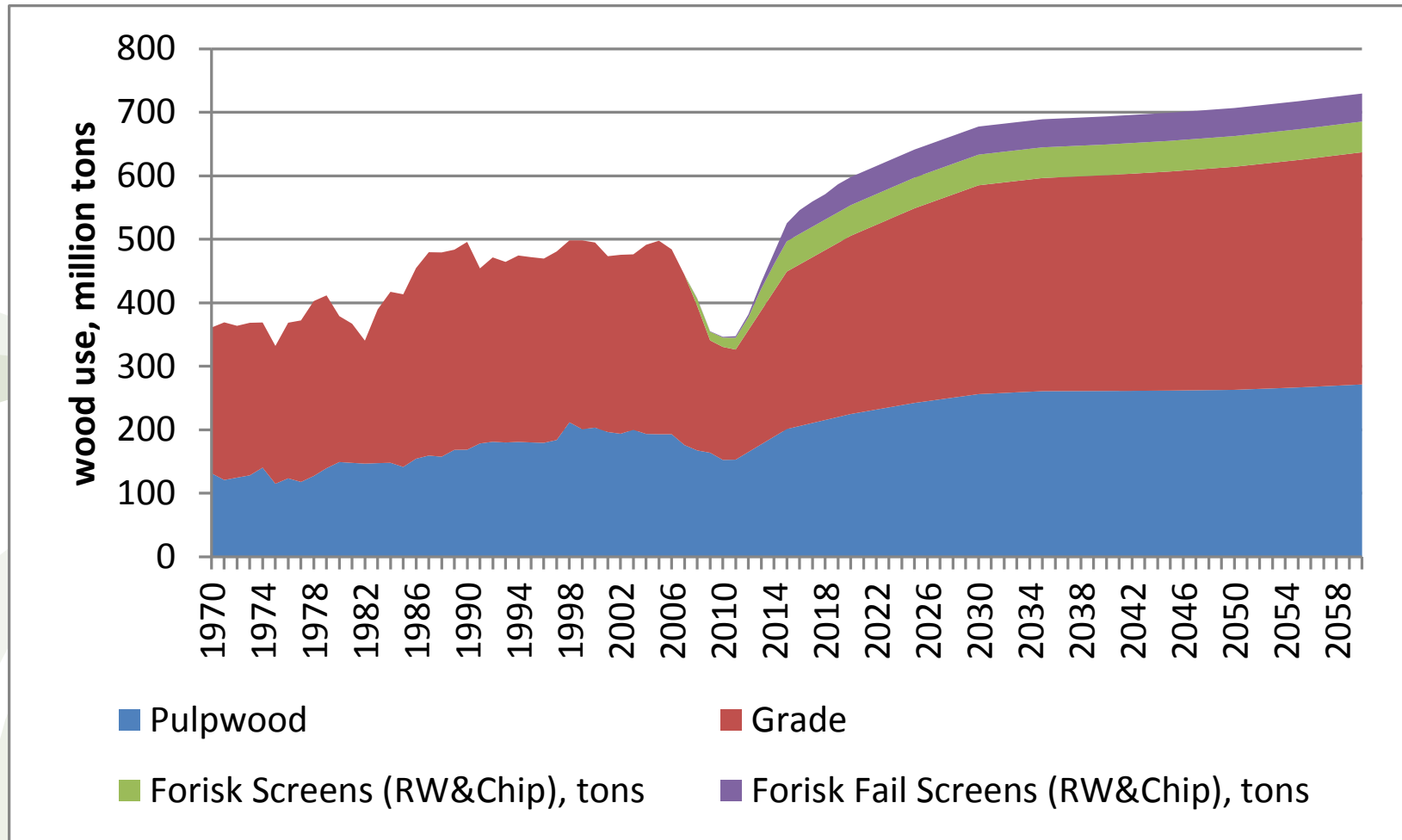
Wood Bioenergy: Why do Projects Fail?



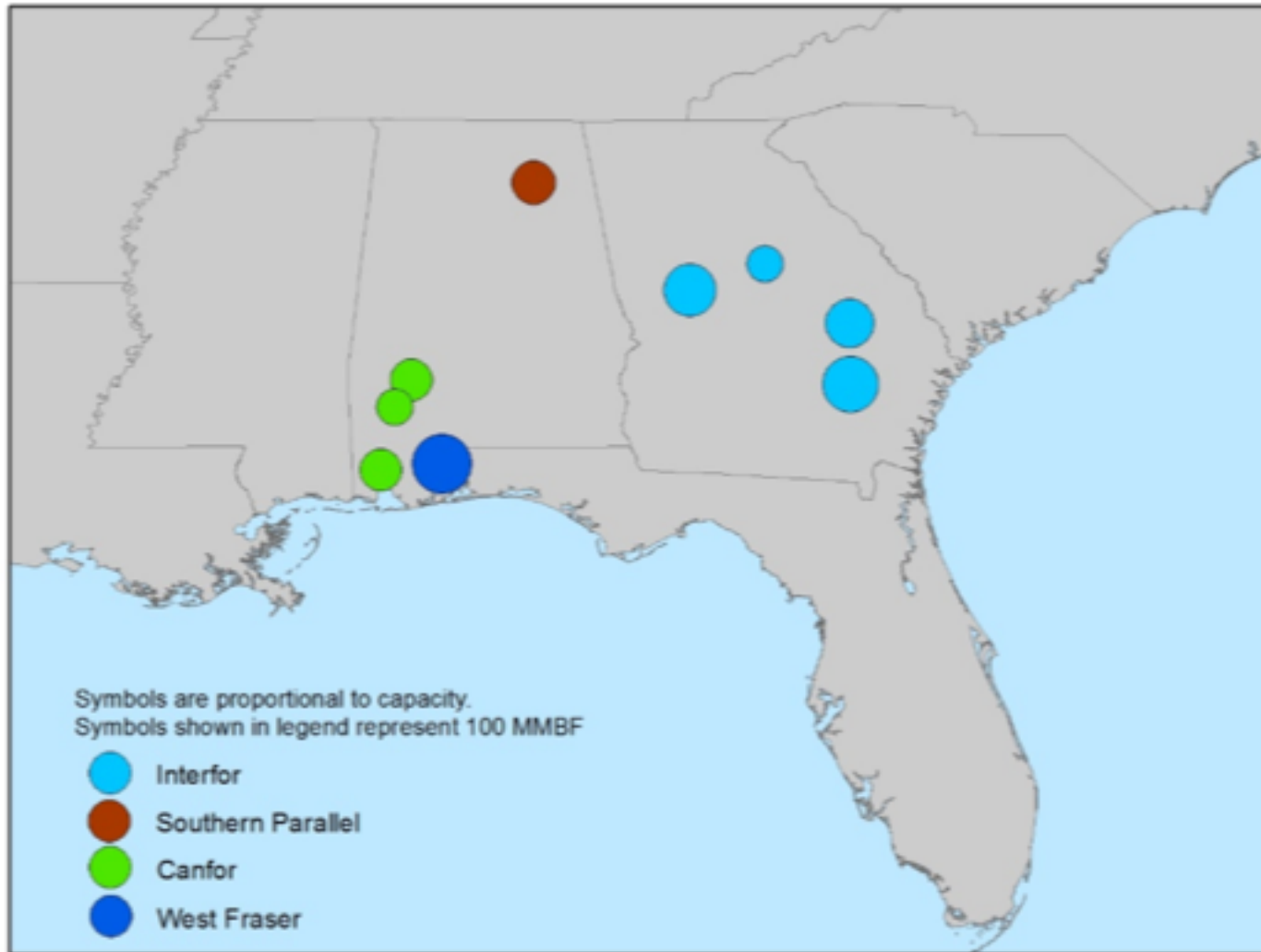
Projects face practical limits to growth. Example: pellet plants in U.S. South



Projected Wood Demand: U.S.



U.S. Capital Investments by Canadian Lumber Producers



About Forisk Consulting

- Forisk provides management consulting and educational services to senior management and investors in the forest industry and timberland investing sectors.
- Founded in 2004.
- Key products:
 - *Forisk Forecast*
 - *Wood Bioenergy US*
 - *US Timberland Owner List*
- Books:
 - *Wood for Bioenergy* (Forest History Society)
 - *Forest Finance Simplified* (Forisk Press)