

Woody biomass from U.S. South-East

Overall approach and preliminary results

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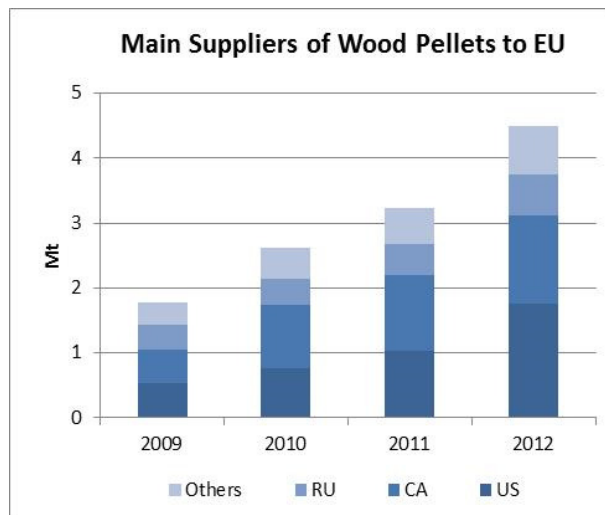
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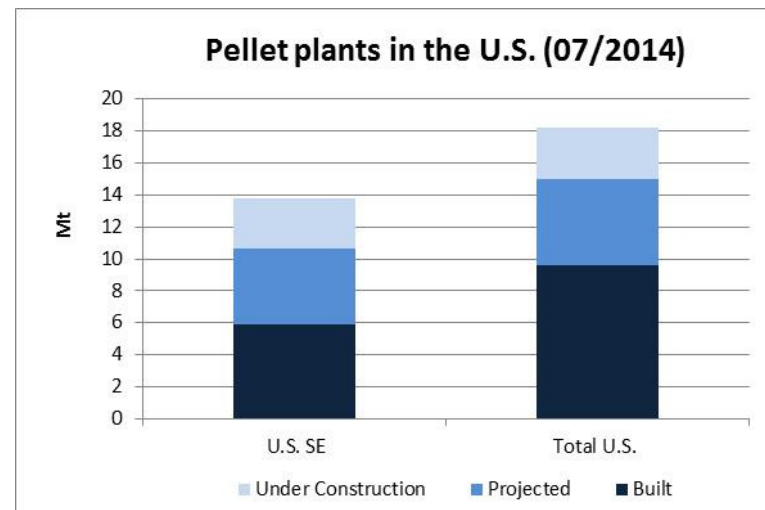
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U.S. Pellet export market

- Demand growth in the EC (UK especially) has driven uptick in production.
- Demand continues to grow
- 63% of U.S. exported biomass comes from the Southeast (SE) (North American Wood Fibre Review, 2013)

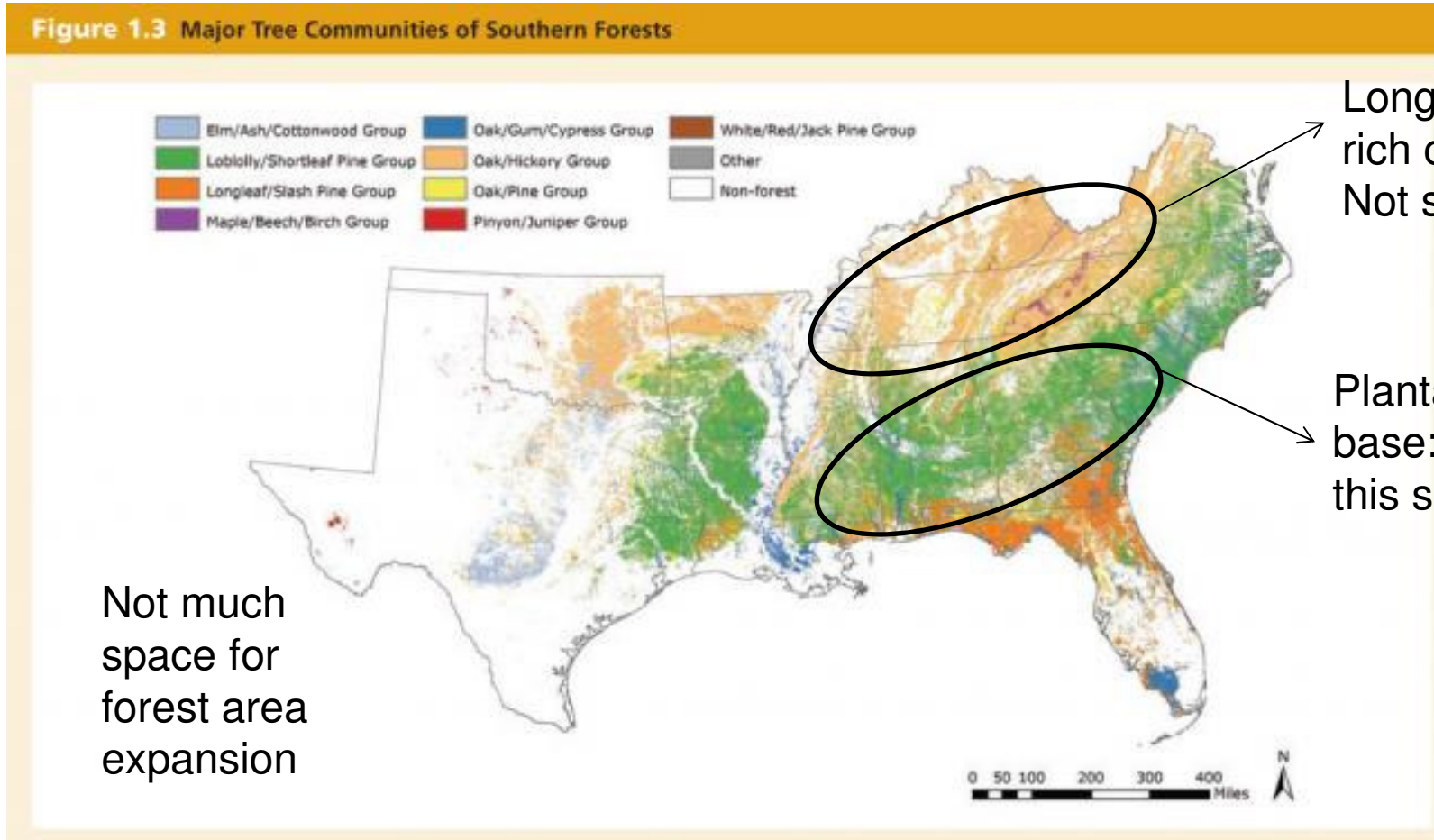


Source: USDA FAS (2013)

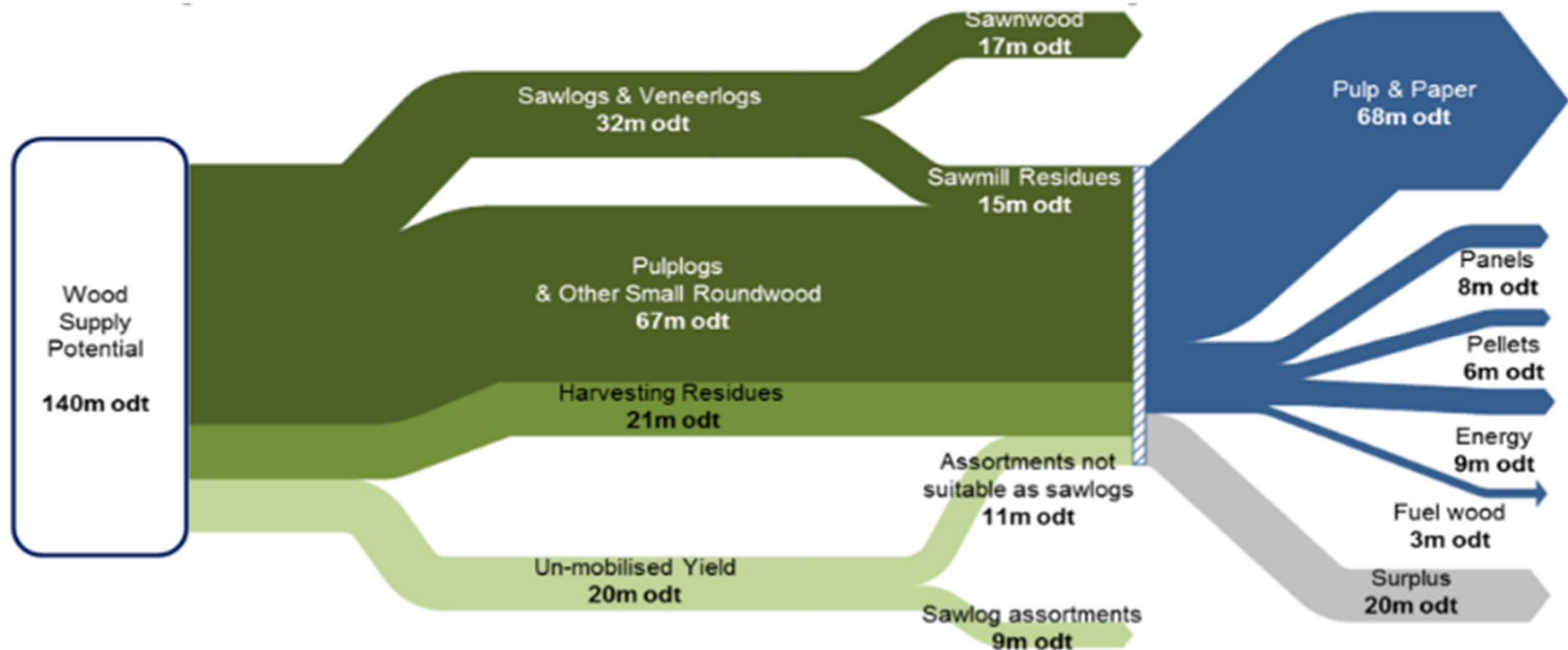


Source: Own calculations based on Biomass Magazine (2014)

Forest Base in the U.S. SE

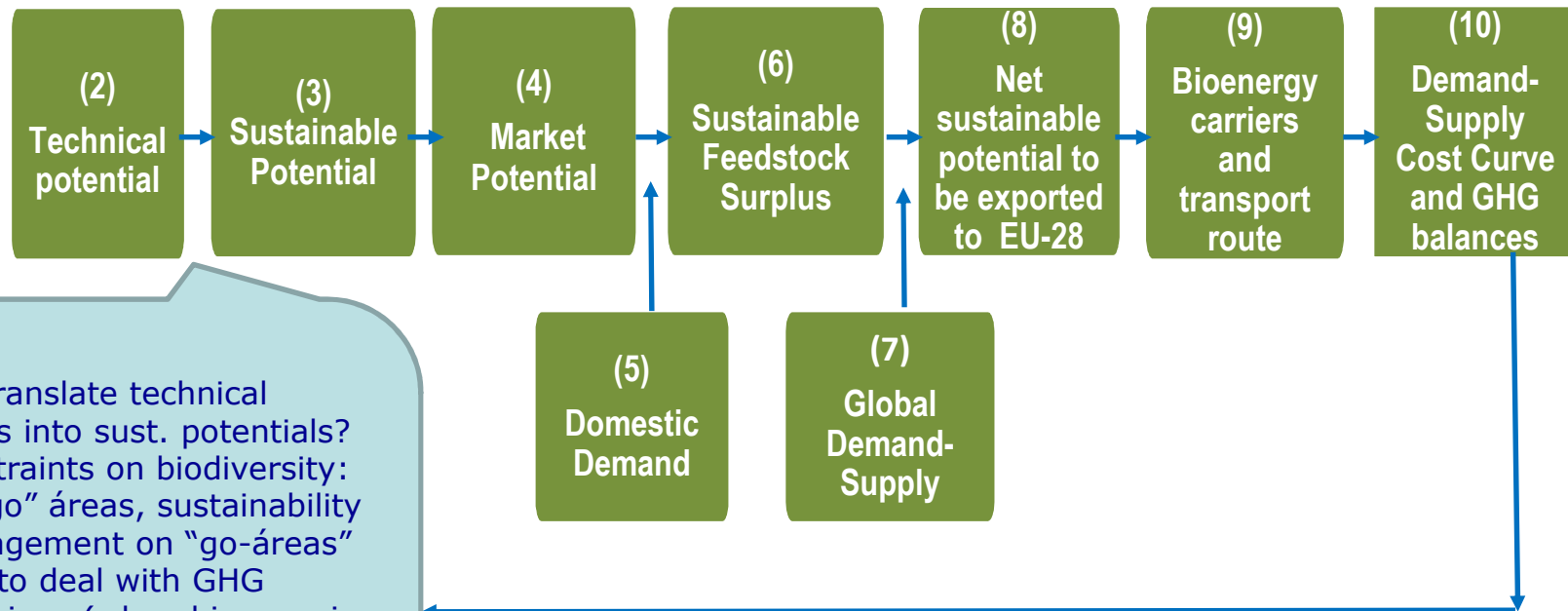


Wood Biomass flows in the U.S. SE



Source: Pöyry (2014)

Assessing Sustainable Bioenergy Import Chains – Applied to the U.S. Case Study



How to translate technical potentials into sust. potentials?

- Constraints on biodiversity: "no-go" areas, sustainability management on "go-areas"
- How to deal with GHG emissions (when biomass is not only for bioenergy but also for other sectors e.g. pulp & paper?)
- (Domestic) demand

Main equations:

(3) = (2) – unsustainable biomass

(4) = (3) * market potential (semiquantitative analysis)

(6) = (4) – (5)

Note: From Step 3 onwards, potentials are subject to scenario conditions (BAU...)



Technical Potential



- **USFS Timber Products Output (TPO) Data from Forest Inventory Analysis (FIA) Program**
- Using 2001-2011 average to account for interannual variability.
- 2009 is most recent published data point.
- Much of the 2011 dataset has been obtained from USFS and is being incorporated.
- Projecting forward to 2020/2030, considering both Billion Ton Update and Southern Forest Futures Project estimates.



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Sustainable Potentials

- **Pulplog yield** based on USFS, and Abt et al.
- **Forest residues** (FIA/TPO data - 50% removal per Perlack, 2011)
- **Sawmill residues** (TPO data)
- **Urban wood wastes** (US DOE/NREL data)

Sustainable Potential



- Assign **county-level** TPO production data to actual forest area
- Exclude **protected forest** lands
- Exclude **high carbon content lands** as appropriate
- Exclude **high biodiversity value** lands as defined by Nature Conservancy (IUCN, FSC, others)



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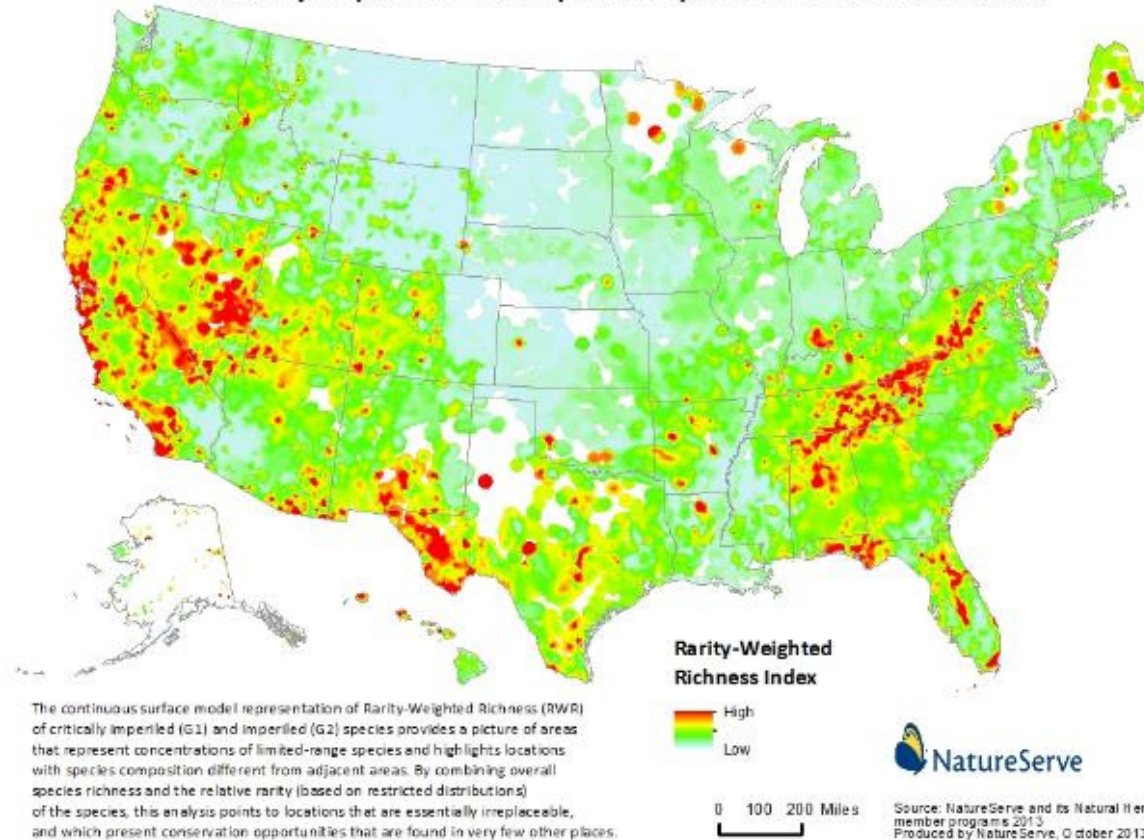


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Sustainable Potential

Nature Conservancy- High Biodiversity Value Areas

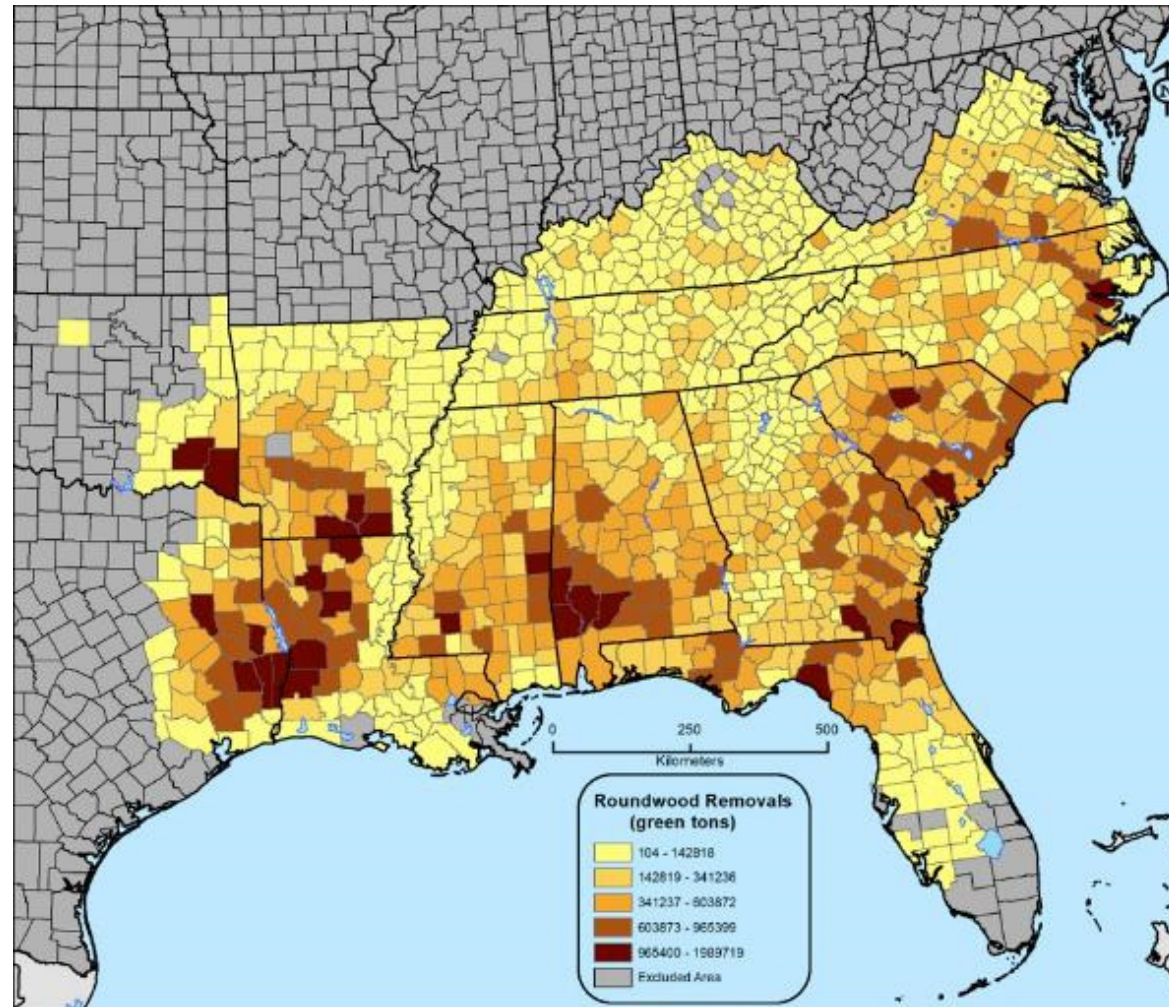
NatureServe Rarity-Weighted Richness Model of Critically Imperiled and Imperiled Species in the United States



http://www.natureserve.org/sites/default/files/natureserve_rwr_hotspots_2013_final.jpg

Sustainable Potential

Pulplog yield in the U.S. SE (FIA/TPO data)



Own analysis/graphic based on USFS TPO data



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Sustainable Potential

Sawmill residue availability in the U.S. SE (USFS Timber Product Output database)

