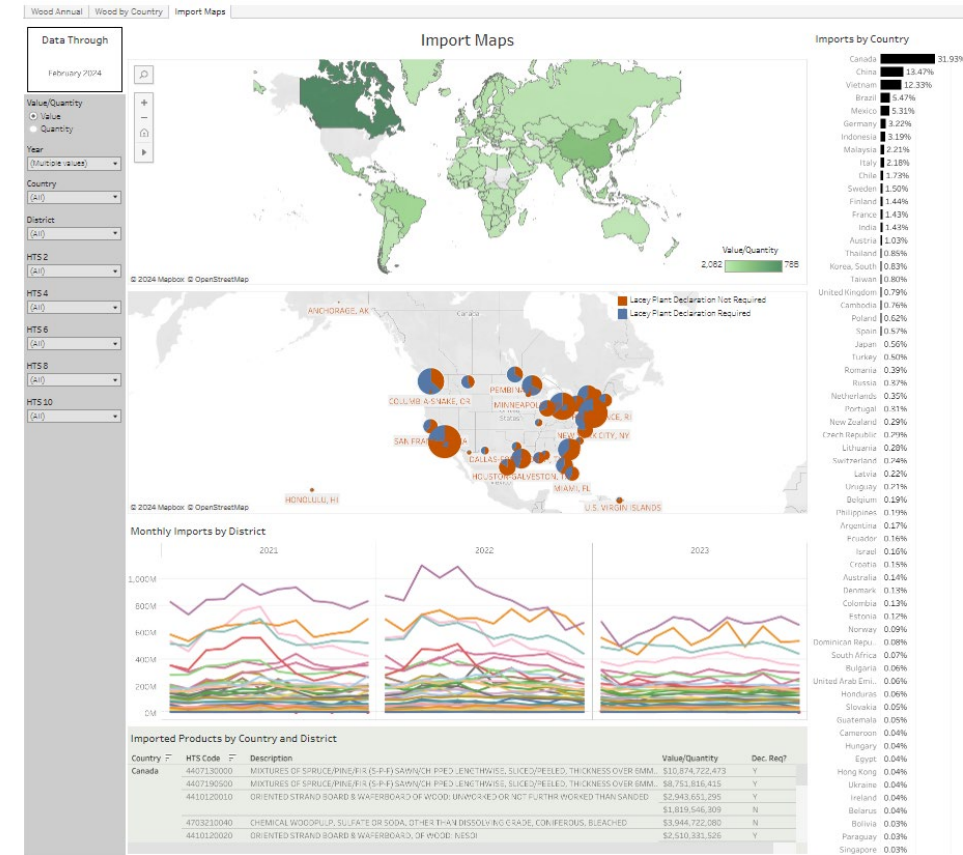
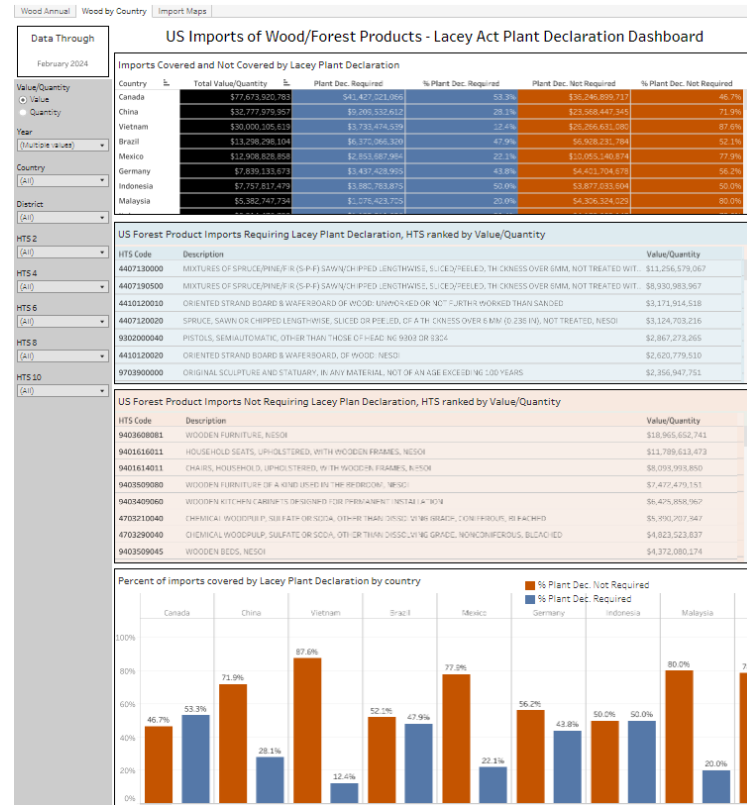
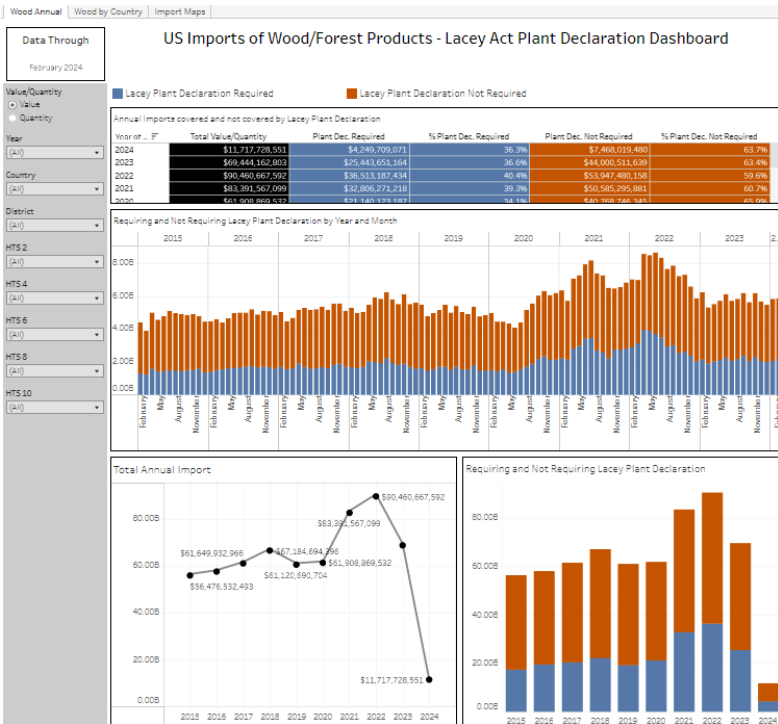


Visualizing US Imports of Wood/Forest Products: Relevance for the Lacey Act Plant “Dec Req”



Session Agenda

- Background
 - HS & HTS Codes
 - Types of Trade Data
 - US Lacey Act Plant Declaration Requirement (“Dec Req”) and Implementation Schedule
 - Process of Joining US Import HTS Data with Lacey Plant Dec Implementation Schedule
- Creating and Using Dashboards
 - Developing an Automated Pipeline to Retrieve, Process, Join, and Visualize Data
 - Overview of Current Dashboards
 - Interactive Demo and Dashboard Exploration
 - Design Updates and Functionality is Continual and Iterative – Open to Feedback
- Discussion and Q&A

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Background: HS & HTS Codes

- HS = “Harmonized System”
 - Nomenclature/Codes have 6-digit Hierarchical Structure Classified by the WCO
 - Common Source of Data: UN COMTRADE
 - Typically > 1-year data availability time lag and not all countries report to UN
 - Derived/Processed Data Sources/Visualizations:
 - Chatham House’s ResourceTrade.Earth Dashboard
 - Mirror flows reconciled = CEPII BACI Database; EFI’s Forest Products and Trade Flow Database and Dashboard
- HTS = “Harmonized Tariff Schedule”
 - Country-specific 10-digit Code Structure (possible increases to 12-digits)
 - HTS US = “Harmonized Tariff Schedule of the United States”
 - Official Source of HTS US International Trade Data: US Census (USA Trade Online & API)
 - Data Fields: Month, Year, HTS US, HTS Description, Foreign Trade Partner, US Port District, Value, Weight
 - Monthly data release schedule runs ~5 week time lag – e.g., March 2024 data to be released 5/2/2024
 - Various US Agencies have their own access points (some with additional processing):
 - E.g., US International Trade Commission (US ITC) Dataweb, NOAA NMFS / FOSS

Background: Types of Available Trade Data

- Aggregated “HS/HTS Code” Trade Data/Statistics
- Bill of Lading (BoL) Transaction-level Data
 - Includes B2B trade relationships (Companies and Addresses), Ports of Lading/Unlading, Goods Shipped/Commodity Description, HS/HTS, Value/Volume; Carrier and Container Number
 - Dirty and large: extensive cleaning required across millions of rows w/ > 50 columns
 - Data are expensive w/ country-specific dataset resolution differences & third-party data providers
- BoL data provide information that can not be identified from lower-resolution aggregated “HS/HTS Code Trade Data”
 - Examples of working with Bill of Lading data:
 - TimberSleuth → TradeSweep cleaning & TradeSleuth analysis modules
 - Virginia Tech, WWF, TRAFFIC, and Simeone Consulting developed proof-of-concept anomaly detection algorithms
 - Virginia Tech, World Forest ID, and Simeone Consulting have further developed methods to clean, join, and analyze BoL datasets to look for emerging/shifting trends suggesting an elevated risk of false or fraudulent origin claims that may be at risk for evasion of taxes, regulations and trade policies, and sanctions
 - Trase.Earth Team (Stockholm Environment Institute and Global Canopy)
 - US Federal Reserve: <https://doi.org/10.17016/FEDS.2021.066>

Background: US Lacey Act Plant Declaration Requirement (“Dec Req”) and Implementation Schedule

- US Lacey Act (16 U.S.C. §§ 3371-3378) applies to all US imports of plants and plant products
- Unlawful to import certain products without a Plant Declaration
- Plant Declaration requires US importers to declare plant taxonomy (scientific name = genus and species), country of harvest, and corresponding quantities
- Q: How to evaluate the coverage of US imports of wood and forest products that require Plant Declarations?

E.g., How do US imports of the HTS in Ch. 94 that currently require Plant Declarations compare to imports of the other remaining wooden furniture HTS codes that do not require Plant Declarations?

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

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Lacey Act Declaration Implementation Schedule

Last Modified: March 25, 2024

[Print](#)

Since 2009, APHIS has been phasing in the Lacey Act declaration requirement. APHIS continues to evaluate products to include in future phases and will publish notices in the Federal Register to keep stakeholders and the public informed.

Use the links below to see which Harmonized Tariff Schedule chapters and headings require a Lacey Act declaration.

Heading	Article/Component of Article	Effective Date
4401	Fuel wood	April 1, 2009
4402	Wood charcoal	October 1, 2009
4403	Wood in the rough	April 1, 2009
4404	Hoopwood; poles, piles, stakes	April 1, 2009
4406	Railway or tramway sleepers	April 1, 2009

Heading	Article/Component of Article	Effective Date
9401612010	Upholstered teak chair, household	August 6, 2015
9401612030	Upholstered teak chairs, other	August 6, 2015
940169	Seats with wood frames	April 1, 2010
9401901500	Parts of bent-wood seats	August 6, 2015
9403304000	Bent-wood office furniture	August 6, 2015
9403404000	Bent-wood kitchen furniture	August 6, 2015
9403504000	Bent-wood bedroom furniture	August 6, 2015
9403604000	Other bent-wood furniture	August 6, 2015

<https://www.aphis.usda.gov/plant-imports/lacey-act/implementation-schedule>

Coming Soon: APHIS Lacey Act Phase VII Declaration Implementation

Background: Process of Joining US Import HTS Data with Lacey Plant Declaration Implementation Schedule

1st iteration = Excel: 10+ years ago manually downloaded US import data from US ITC Dataweb, manually identified which HTS2-HTS10 required Plant Declarations, and manually created a join in Excel with a new column “DecReq” identifying whether a given row of data required a Plant Declaration

2nd iteration = R scripts: Partially funded by WWF and EIA to improve on the initial process. Wrote R scripts which, when manually executed, pulled US import data via US Census API and joined with APHIS Plant Declaration Implementation Schedule.

R scripts remain publicly posted on GitHub for others to use:

https://github.com/jcsimeone/US_WoodForestProduct HTS_TradeData

3rd iteration = Current dashboards: Automatically updated and visualized, lag of ~1 day after monthly release from US Census (e.g., Mar 2024 data is being released by US Census on May 2 and will show up on dashboard on May 3).

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 - Developing an Automated Pipeline to Retrieve, Process, Join, and Visualize Data
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 - Example Use-case Interactive Demo and Exploration
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Creating and Using Dashboards

- Developing an Automated Pipeline to Retrieve, Process, Join, and Visualize Data

AWS → Google Drive → Tableau Public

Simeone Consulting, LLC together with A4 Data Consulting:

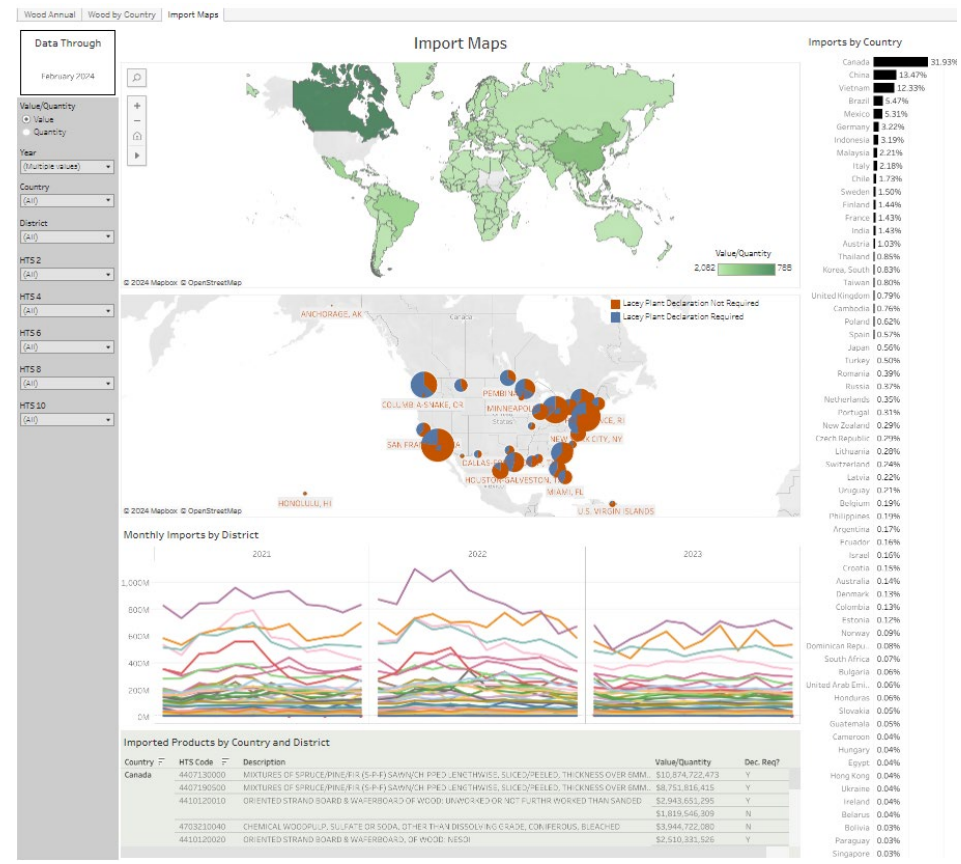
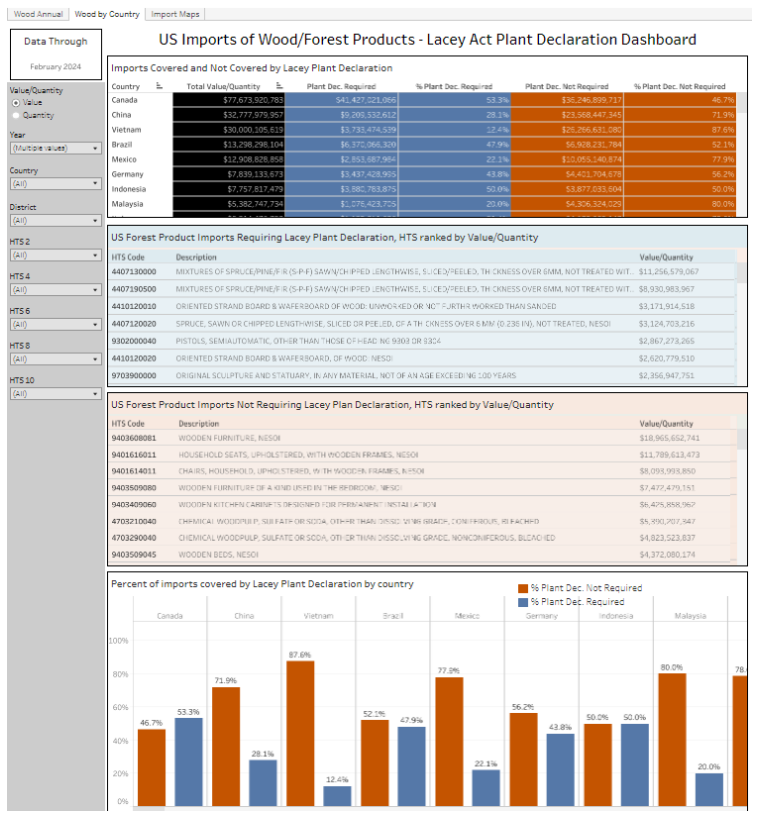
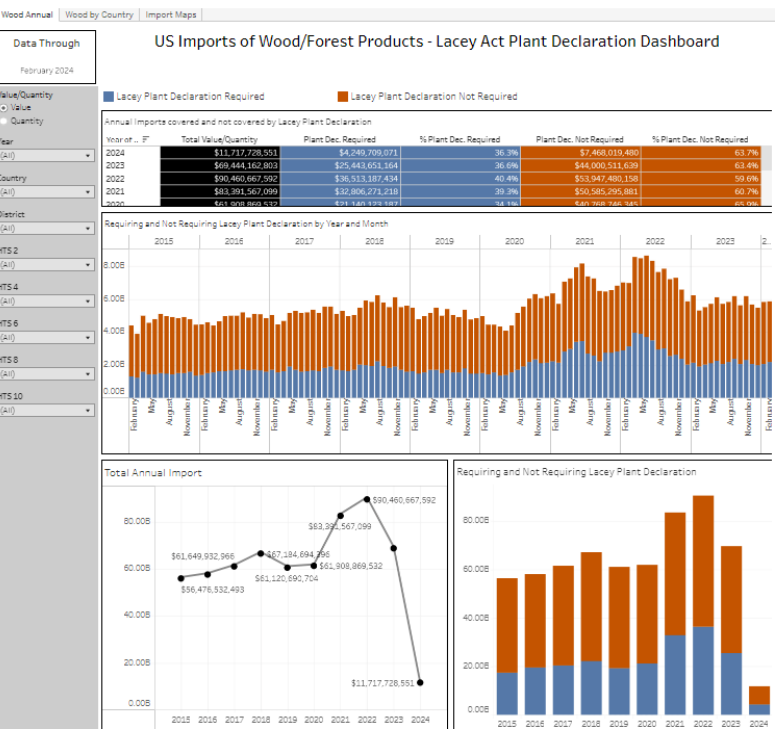
- AWS (Backend Data Retrieval and Processing written in Python):
 - Data storage: S3
 - Lambda functions and AWS Glue jobs (Extract, Transform, Load)
 - Crawler functions to build tables
 - Athena as a SQL editor to query Glue data and tables
- Google Drive (Intermediate Data File Storage)
 - Place to write/save output tables from AWS
 - Place to pull same tables and read as input tables into Tableau Public
- Tableau Public (Visualization)
 - All data used is public data (not proprietary) and therefore can use Tableau Public
 - Open access for anyone to use dashboards

Overview of Current Dashboards

Wood Annual

Wood Country

Import Maps



Grey filter bar on left side: Toggle: Value or Quantity; Multiselect: Year, Partner Country, US Port District, HTS2 – HTS10

- Clicking on chart elements results in data filtering and produces metrics based on user selections
- Each sheet filters independently

Overview of Current Dashboards

- Dashboards include by default:
 - “Standard wood and forest products” HTS (Ch. 44, 47, 48, and wood furniture in Ch. 94)
- + Wood and forest product specialty products that are included in US Lacey Act Plant Declaration Implementation Schedule
 - some of which also contain wood (e.g., woodwind musical instruments)
 - some may/may not, but are included on the implementation schedule for the Lacey Act Plant Declaration (e.g., Ch. 93: firearms, such as revolvers and pistols)
- User can select a subset of HS/HTS based on individual use-case and interest

Interactive Demo and Dashboard Exploration

<https://www.simeoneconsulting.com/dashboards>

Example User Questions:

1) Evaluating coverage of US imports of wood and forest products that require Lacey Act Plant Declarations: How does the value of US imports of wood furniture products in HTS Ch. 94 that currently require Plant Declarations compare to the value of imports of the other remaining HTS Ch. 94 wooden furniture HTS codes that do not require Plant Declarations?

2) Exploring the dynamics of US imports of wood and forest products:

- a) Identify the highest value HTS imported from China between Jan 23 – Feb 24 and whether the HTS requires a Lacey Plant Declaration
- b) Identify whether certain US ports districts import more forest products from China than other districts
- c) Where else does the US import from under the same HTS that is the highest value wood HTS imports from China (94036080801)? How have imports changed since 2015 between the US' top partner countries for imports of this HTS?

Design Updates & Functionality is Continual and Iterative

- Current intended users: developed for my own use and trade-policy analysis
 - Requires knowledge of HTS
- Developing ideas for additional functionality, visualizations, and analysis
- Some design choices were intentional, others neglected inadvertently
- Open to feedback to help make it more useful to others

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Discussion and Q&A

www.simeoneconsulting.com/dashboards

Thank you!

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