



MORE THAN  
*trees*

# Rayonier Carbon Footprint

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Florida Forestry Association Annual Meeting (August 2021)



# COMPANY SNAPSHOT



**TIMBER  
REIT**

**2.7**

MILLION ACRES



**95**  
YEARS

EST.

**1926**

**CERTIFIED**



SUSTAINABLE  
FORESTRY  
INITIATIVE  
SFI-00023  
UNITED STATES



FSC  
NEW ZEALAND



PEFC  
PEFC/40-23-6

Promoting Sustainable  
Forest Management  
[www.pefc.org](http://www.pefc.org)

**34 MM TREES**  
PLANTED PER YEAR



**400**

EMPLOYEES



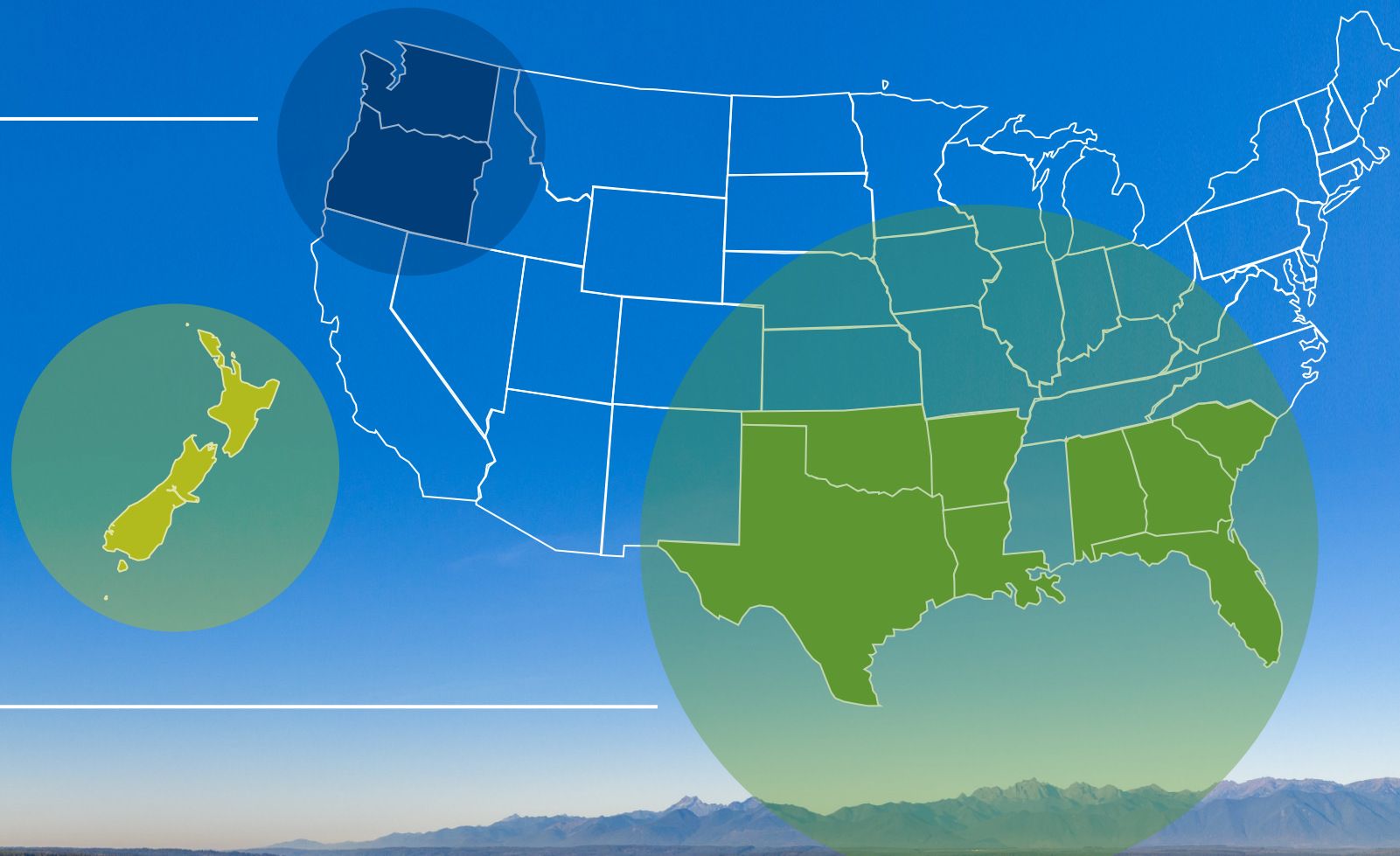
SUSTAINABLE YIELD OF  
**11,000,000 TONS**



499,000 acres  
U.S. Pacific Northwest

419,000 acres  
New Zealand

1.7 million acres  
U.S. South





# FORESTRY



# REAL ESTATE



# LAND RESOURCES





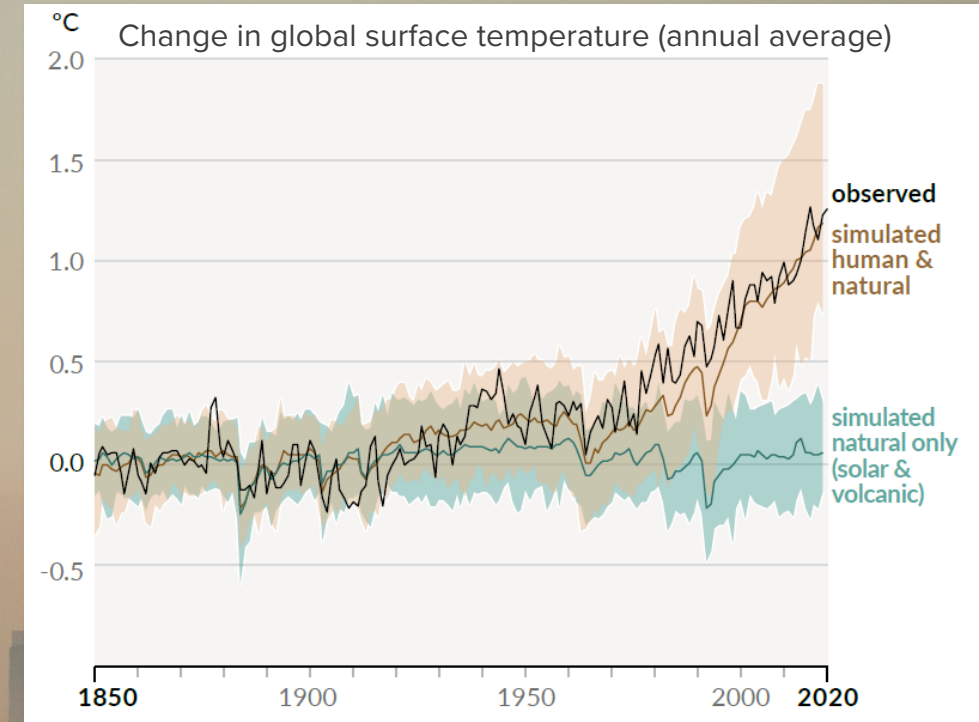
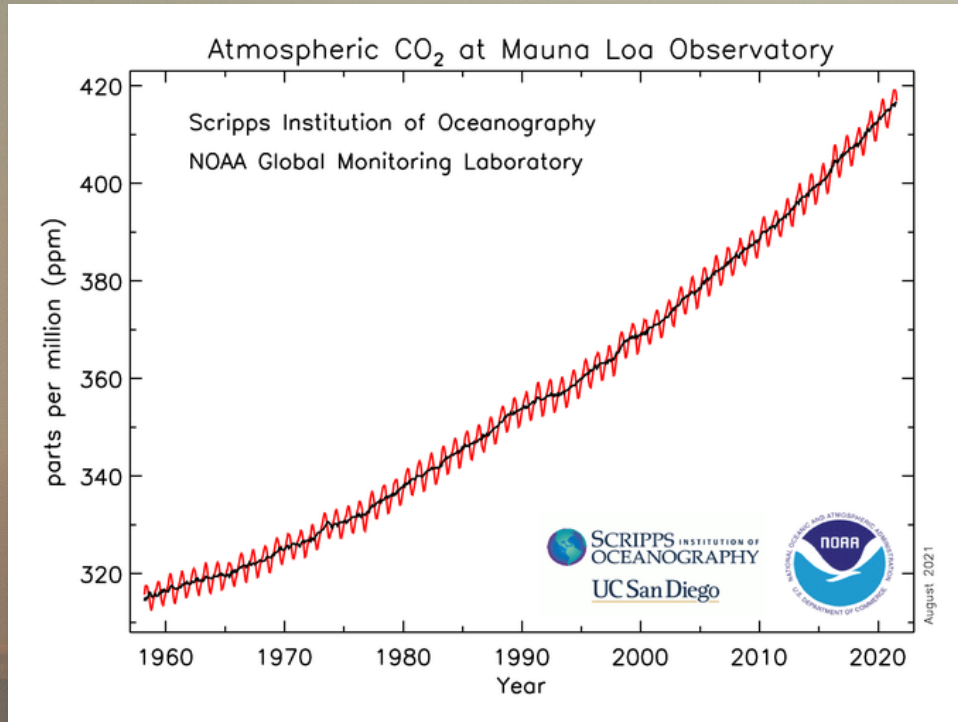
# COMMITTED TO SUSTAINABLE FORESTRY

Meet the needs of the current generation for forest products and ecosystem services from the forest without impairing the ability of future generations to meet their needs.





# RISING GREENHOUSE GAS CONCENTRATIONS

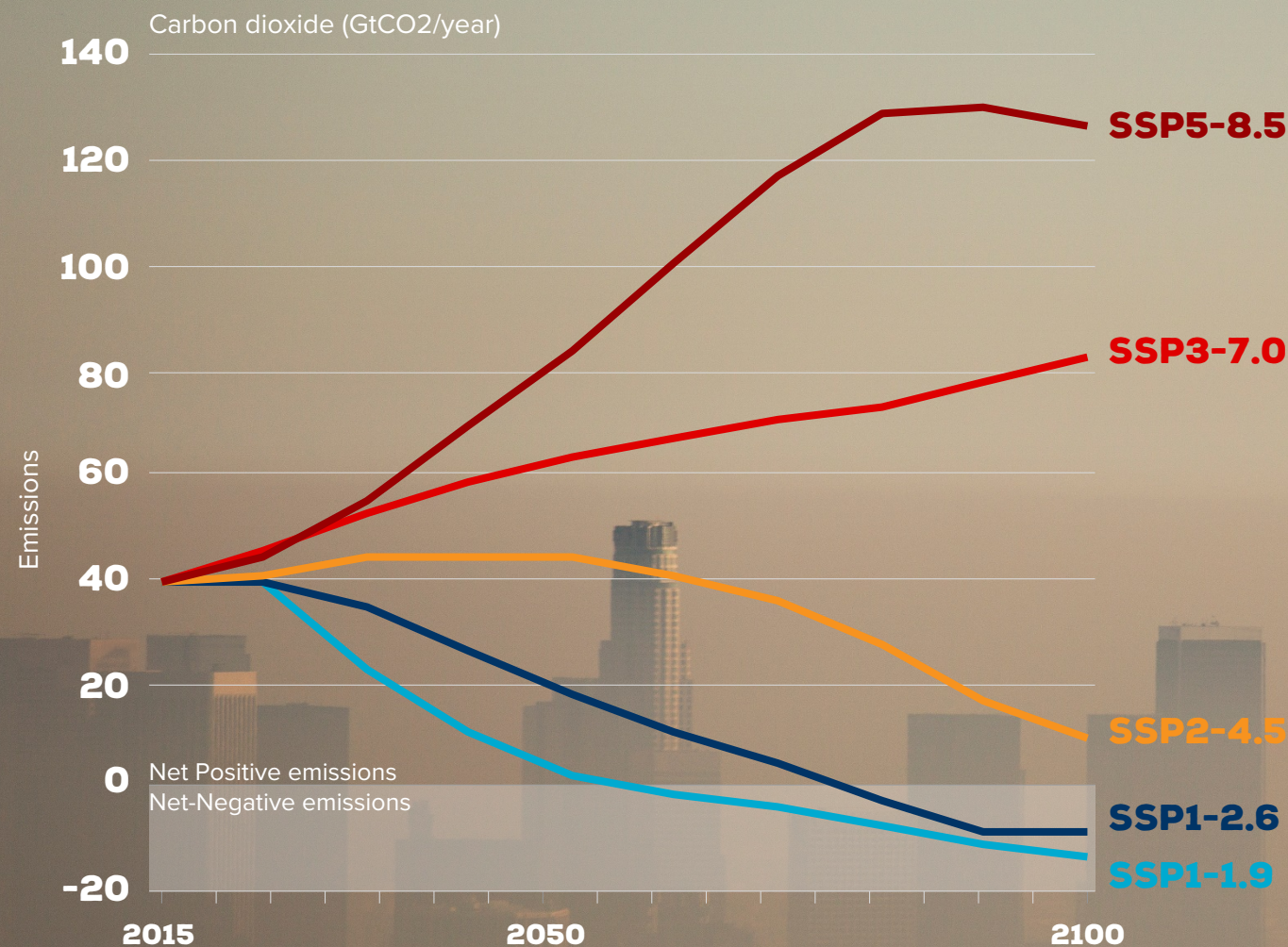


Rising greenhouse gas concentrations caused by fossil fuel combustion lead to increased atmosphere temperatures.



# FUTURE EMISSIONS CAUSE ADDITIONAL WARMING

Total warming dominated by past and future CO<sub>2</sub> emissions



Scenario	Mid-term, 2041–2060		Long term, 2081–2100	
	Best estimate (°C)	Very likely range (°C)	Best estimate (°C)	Very likely range (°C)
SSP1-1.9	1.6	1.2 to 2.0	1.4	1.0 to 1.8
SSP1-2.6	1.7	1.3 to 2.2	1.8	1.3 to 2.4
SSP2-4.5	2.0	1.6 to 2.5	2.7	2.1 to 3.5
SSP3-7.0	2.1	1.7 to 2.6	3.6	2.8 to 4.6
SSP5-8.5	2.4	1.9 to 3.0	4.4	3.3 to 5.7

Source:  
IPCC Sixth Assessment Report 2021 ([https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf))



# IMPACTS OF INCREASED ATMOSPHERIC GHG

## Atmosphere

- Increased temperature (radiation forcing)
- Changes in growing seasons
- Changes in weather
- Rainfall patterns
- Storm intensity
- Rain vs snow & snowmelt patterns

## Terrestrial Ecosystems

- Increased photosynthesis
- Increased water use efficiency
- Increased respiration
- Changes in productivity, ranges and distribution of species
- Altered seed production
- Changes in insects and diseases risks

## Oceans

- Increased temperature
- Sea level rise (thermal expansion of water & melting glaciers)
- Change in currents
- Acidification





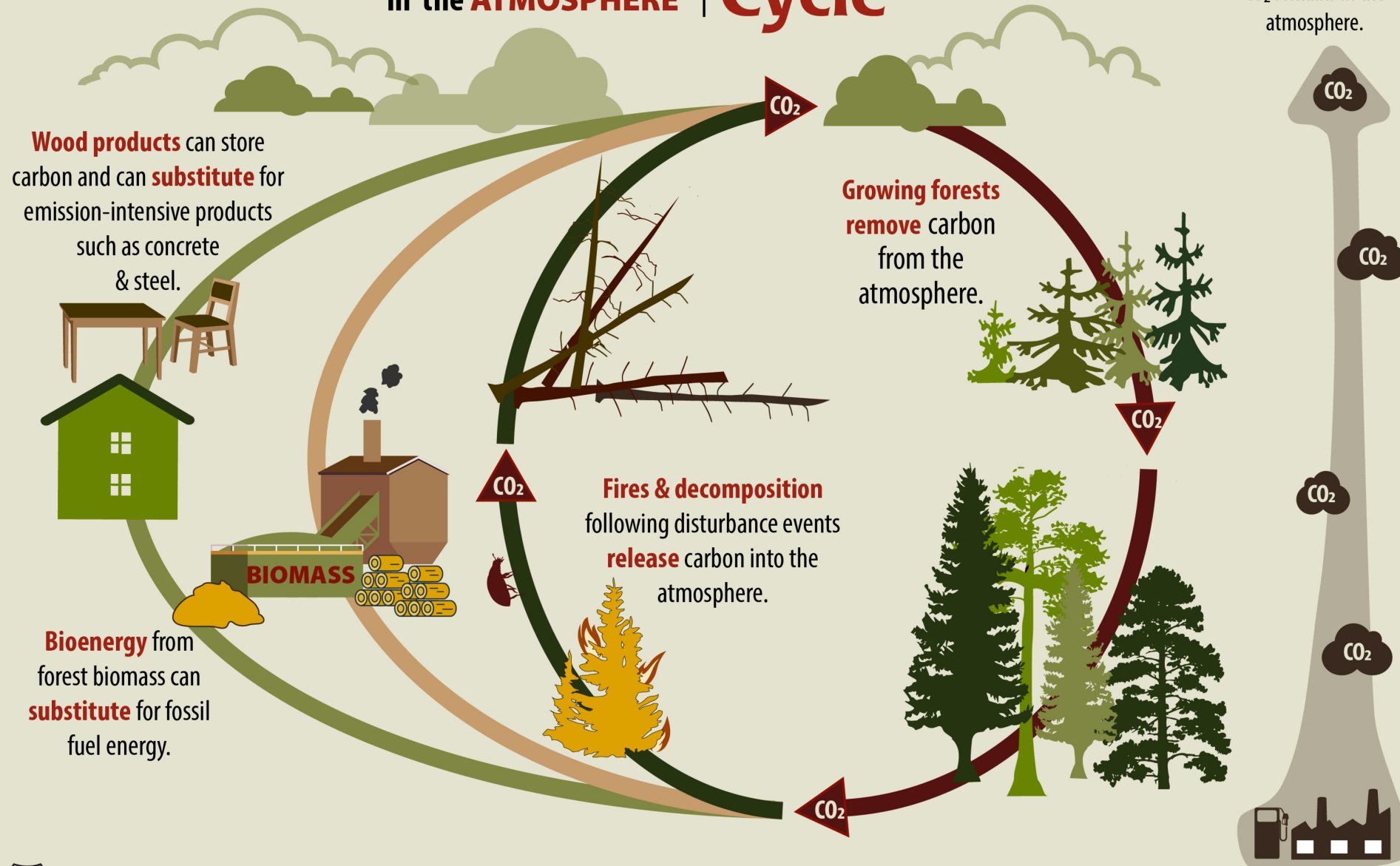
**FORESTS PROVIDE A NATURAL  
CLIMATE SOLUTION**



The closed loop of  
**FOREST CARBON**  
in the **ATMOSPHERE**

# Carbon Cycle

Fossil fuel use is an  
**OPEN SYSTEM** where  
CO<sub>2</sub> remains in the  
atmosphere.







# Rayonier carbon footprint in 2020



# RAYONIER 2020 CARBON REPORT

- **Carbon stored, sequestered, removed during harvest, stored in products in use and emissions in U.S. and N.Z.**
  - Life Cycle Analysis including carbon in forests and carbon stored in wood products in use
  - Estimate of carbon as CO<sub>2</sub> equivalents (metric tons) in U.S. and N.Z. forests were determined
  - Carbon stored in trees, understory, coarse woody debris, forest floor, and mineral soil
  - Carbon sequestered in trees, understory, coarse woody debris, forest floor and mineral soil
  - Carbon removed in harvested timber
  - Scope 1, 2 and 3 emissions
  - Carbon stored in wood products in use in domestic and export markets from our harvested timber



# RAYONIER 2020 CARBON REPORT

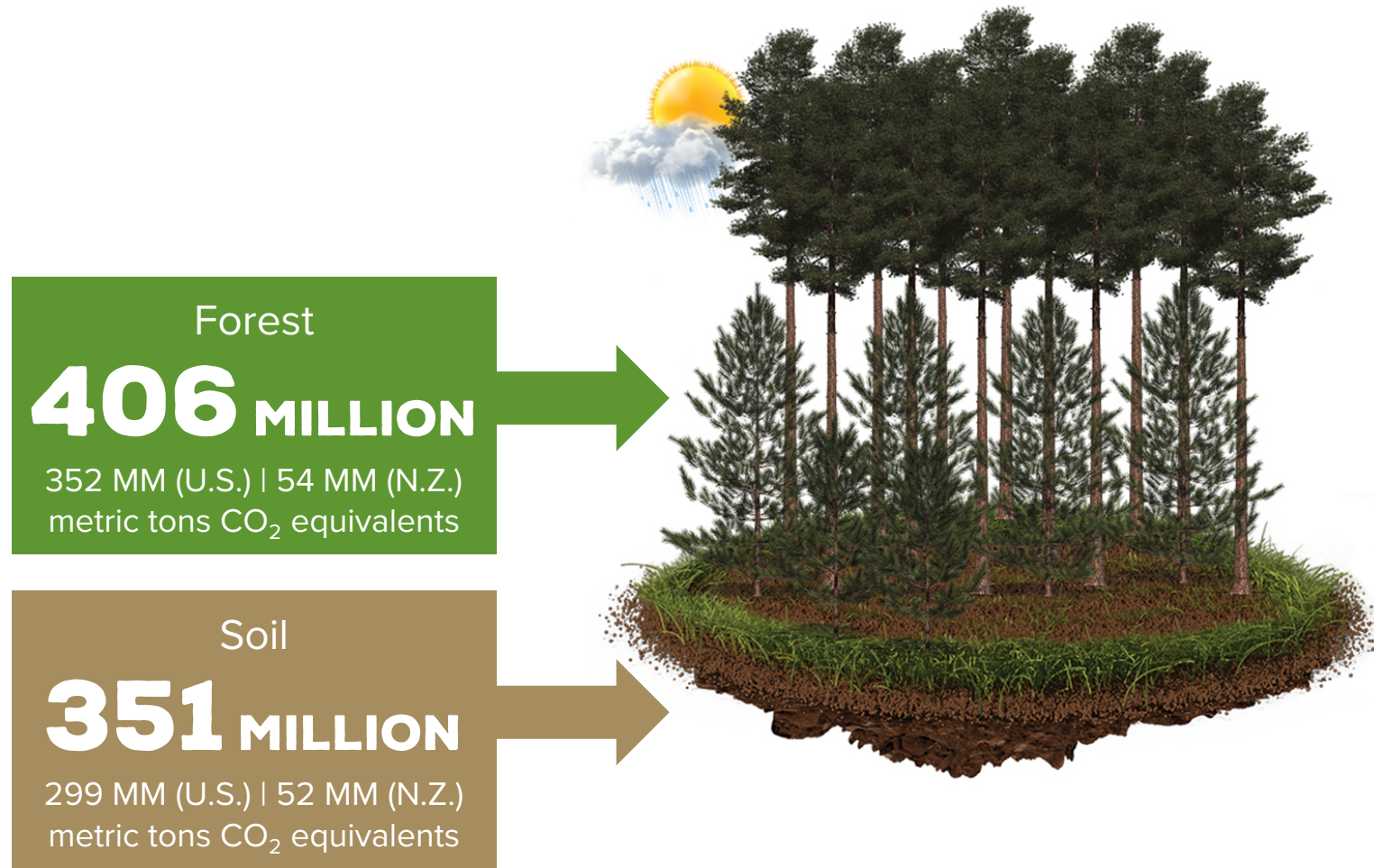
- **Open and transparent process**

- Used Rayonier data for 12/31/2020 reported in 10K that is publicly available
- Clearly described methods and calculations
- Used data and methods developed and published by governmental agencies or in peer reviewed journals
- N.Z. Ministry for Primary Industries, U.S. Forest Service, U.S. EPA, World Bank



# 757 MILLION TONS OF CARBON STORED

In Rayonier forests at year-end 2020



Carbon stored in Rayonier forests is equal to the annual emissions of 158 million people.



**158 MILLION**

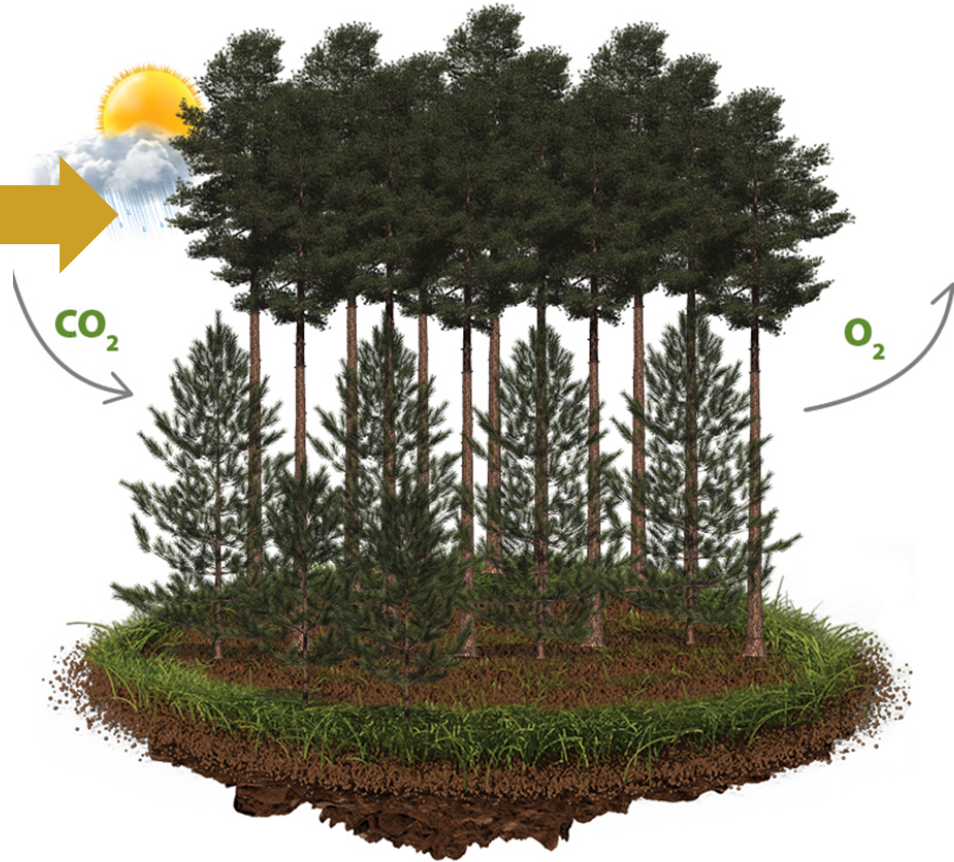
Source: The World Bank reports that the global annual per capita carbon emissions are 4.8 metric tonnes.



# 14.5 MILLION TONS OF CARBON SEQUESTERED

by Rayonier forests during 2020

Sequestration  
**14.5 MILLION**  
11.8 MM (U.S.) | 2.7 MM (N.Z.)  
metric tons CO<sub>2</sub> equivalents



Carbon sequestered by Rayonier forests during 2020 was equal to removing 3.1 million cars from the road.

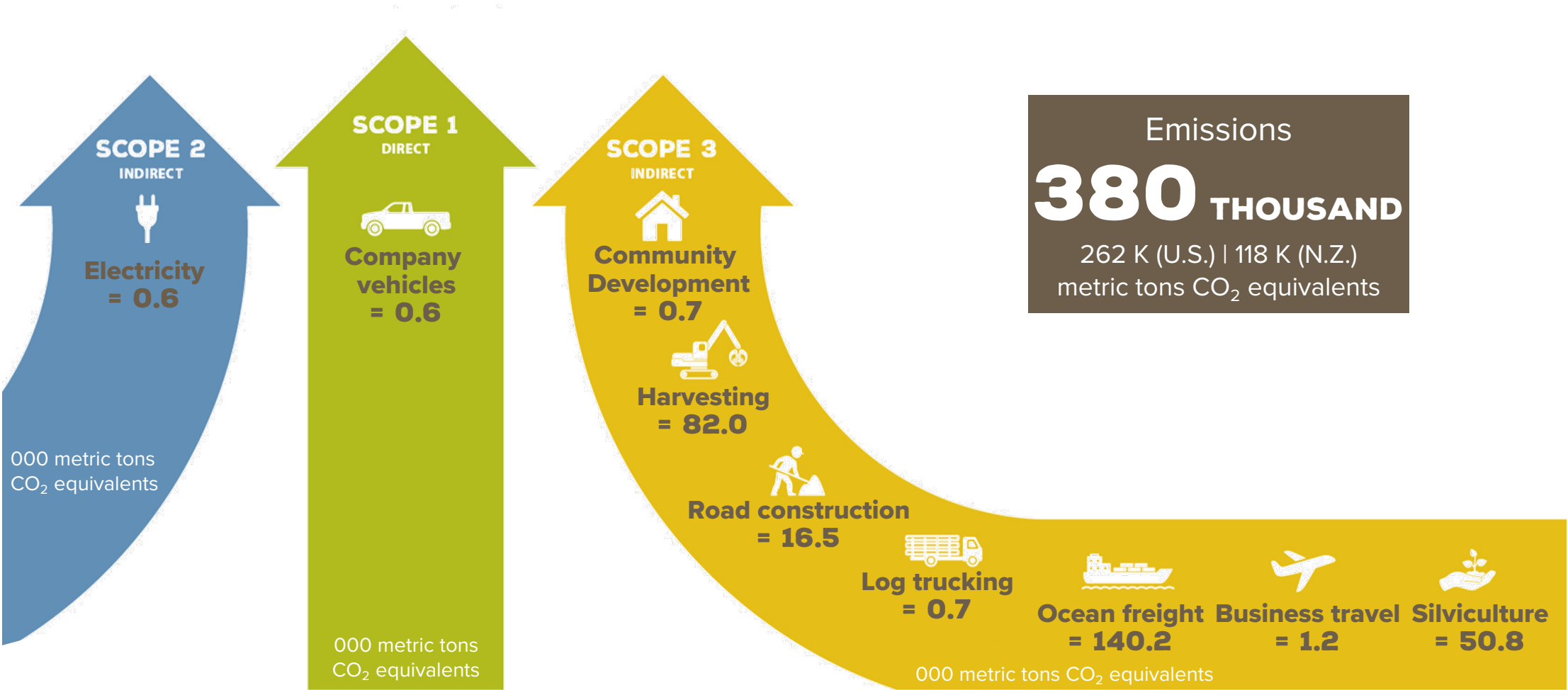


**3.1 MILLION**



# EMISSIONS ASSOCIATED WITH OUR BUSINESS

During our operations in 2020



Scope 1 emissions are direct emissions from owned or controlled sources.  
Scope 2 emissions are indirect emissions from the generation of purchased energy.  
Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain, including both upstream and downstream emissions.



# 9.2 MILLION TONS TRANSFERRED THROUGH HARVEST

During our operations in 2020



Harvest transfer

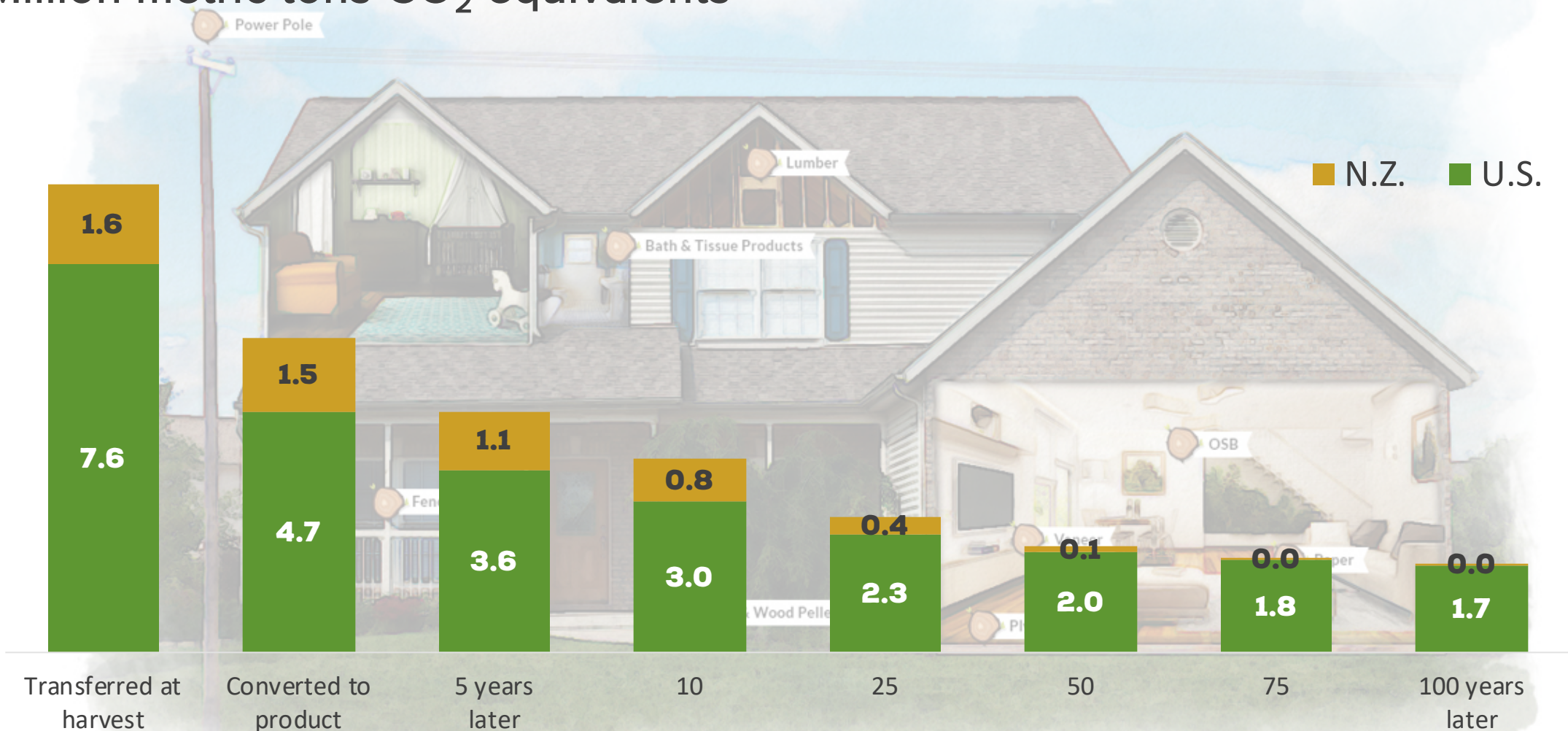
**9.2 MILLION**

7.6 MM (U.S.) | 1.6 MM (N.Z.)  
metric tons CO<sub>2</sub> equivalents



# CARBON STORED IN WOOD PRODUCTS IN USE

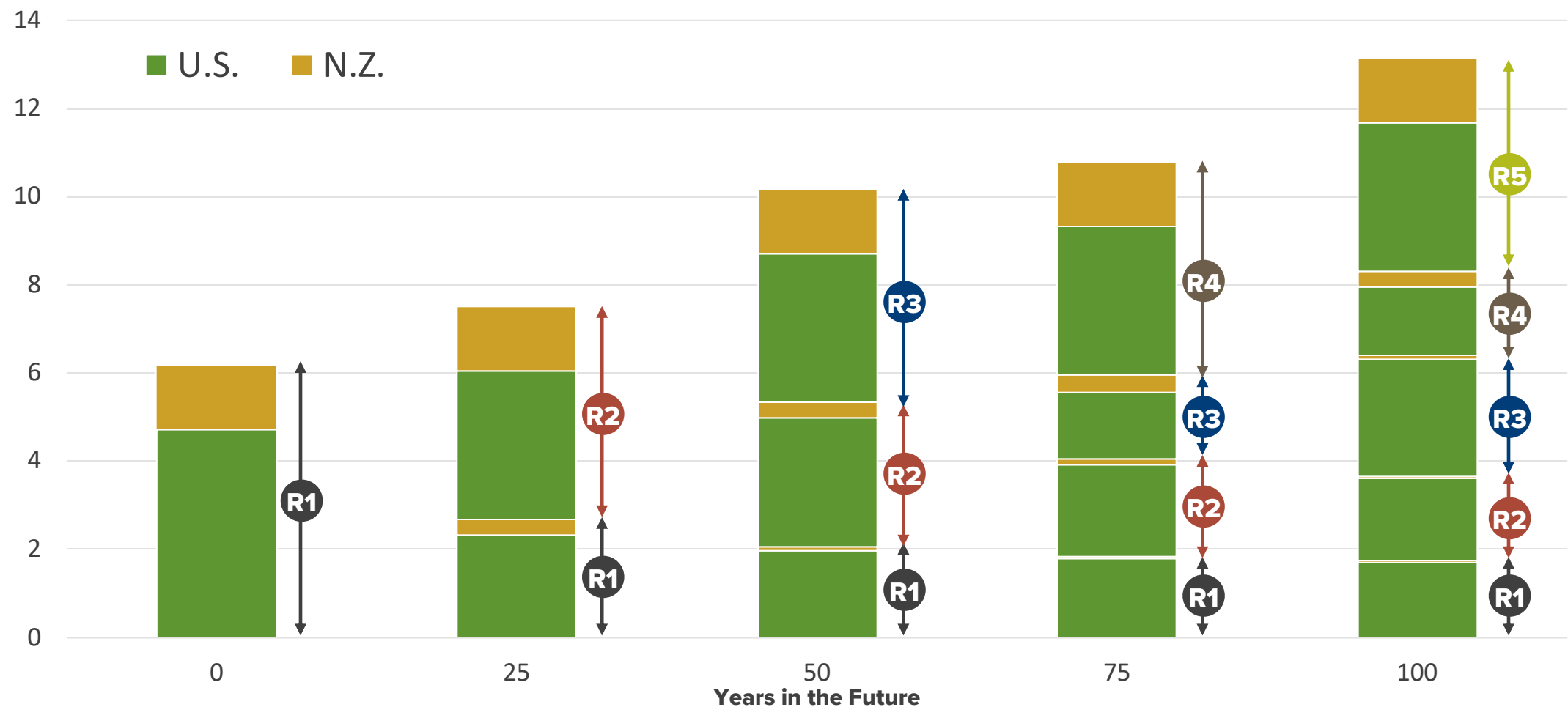
Million metric tons CO<sub>2</sub> equivalents





# CARBON STORED IN PRODUCTS IN MULTIPLE ROTATIONS

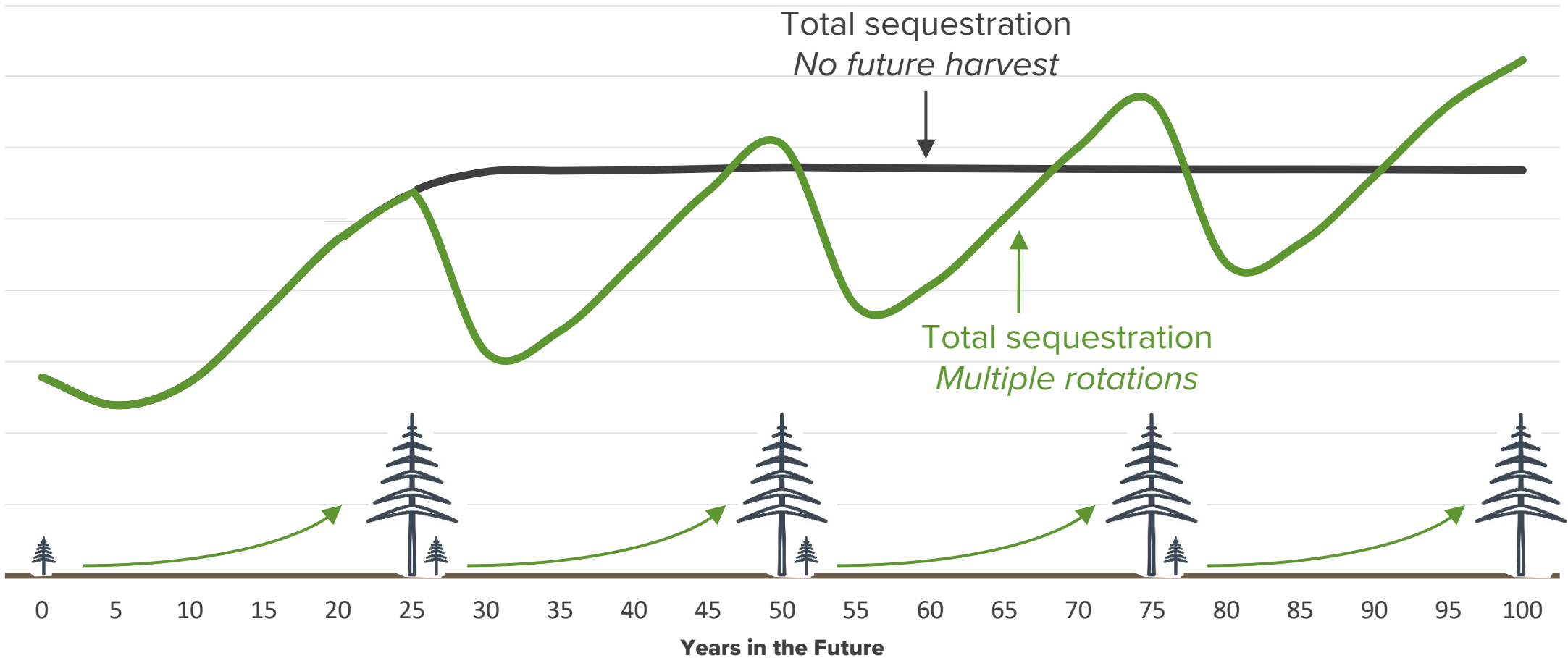
Million metric tons CO<sub>2</sub> equivalents





# VALUE OF WORKING FORESTS IN THE U.S. SOUTH

Comparison of multiple rotations vs replanting with no future harvest



Carbon sequestration in Rayonier southern pine forests including carbon stored in forest products following harvest and replanting.



## SUMMARY AND CONCLUSIONS (1/2)

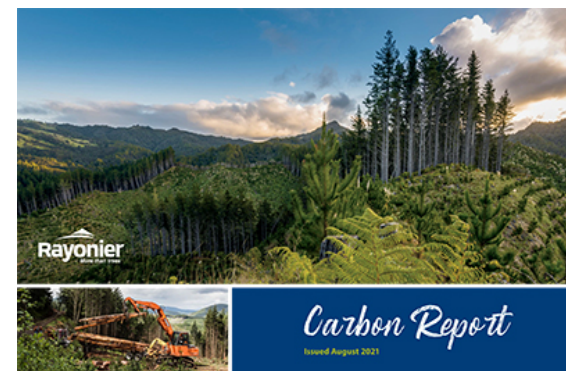
- Rayonier forests stored more than 750 million metric tons of CO<sub>2</sub> equivalents in 2020. This is the net results of 100 years of sustainable forest management.
- Rayonier forests sequestered 14.5 million metric tons of CO<sub>2</sub> equivalents in 2020. This offsets the annual emissions of approximately 910,000 people in the U.S. or is equivalent to taking 3.1 million vehicles off the road.
- Rayonier emissions from all business sectors totaled 380,000 metric tons of CO<sub>2</sub> equivalents in 2020. This is substantially less than the carbon sequestered in our forests demonstrating that Rayonier has net-negative emissions.
- Rayonier removed 9.2 million metric tons of CO<sub>2</sub> equivalents in harvested timber in 2020.



## SUMMARY AND CONCLUSIONS (2/2)

- Carbon continues to be stored in forest products made from our trees for many decades and this carbon continues to accumulate through multiple rotations. After 100 years, over 12 million metric tons of CO<sub>2</sub> equivalents will remain in wood products in use from the trees harvested from our forests.
- More carbon is stored in forests and the wood products in use over multiple cycles of harvest, replanting, and regrowth than in forests without future harvest.

**2020 Carbon report available @  
[www.rayonier.com/sustainability](http://www.rayonier.com/sustainability)**







# Questions?

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# FORESTS PROVIDE A NATURAL CLIMATE SOLUTION





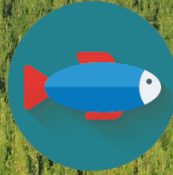
# FORESTS PROVIDE A NATURAL CLIMATE SOLUTION



CLEAN AIR



CLEAN WATER



WILDLIFE



ENERGY



HUNTING



RECREATION



# FLORIDA WORKING FORESTS PROVIDE

WOOD FROM WORKING FORESTS  
IS FOUND IN...



WORKING FORESTS PROVIDE...



**104,707  
RURAL JOBS**



**\$41 BILLION  
PAYROLL**



**6.7% OF  
MANUF. GDP**



**CLEAN AIR**



**CLEAN WATER**



**WILDLIFE**



**ENERGY**



**HUNTING**



**RECREATION**