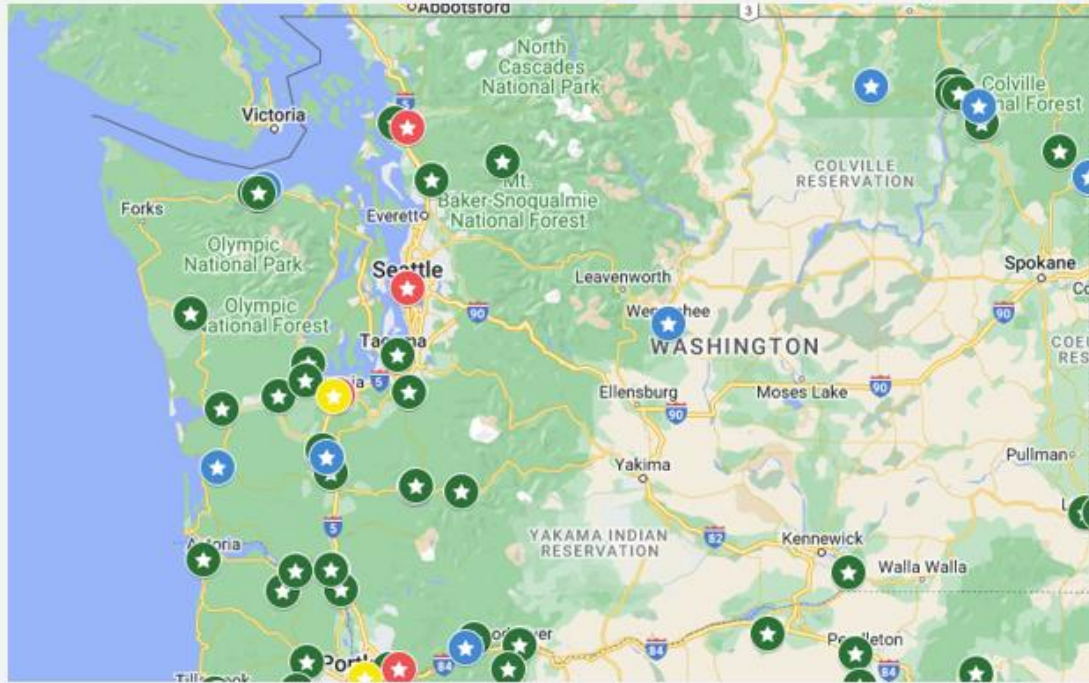
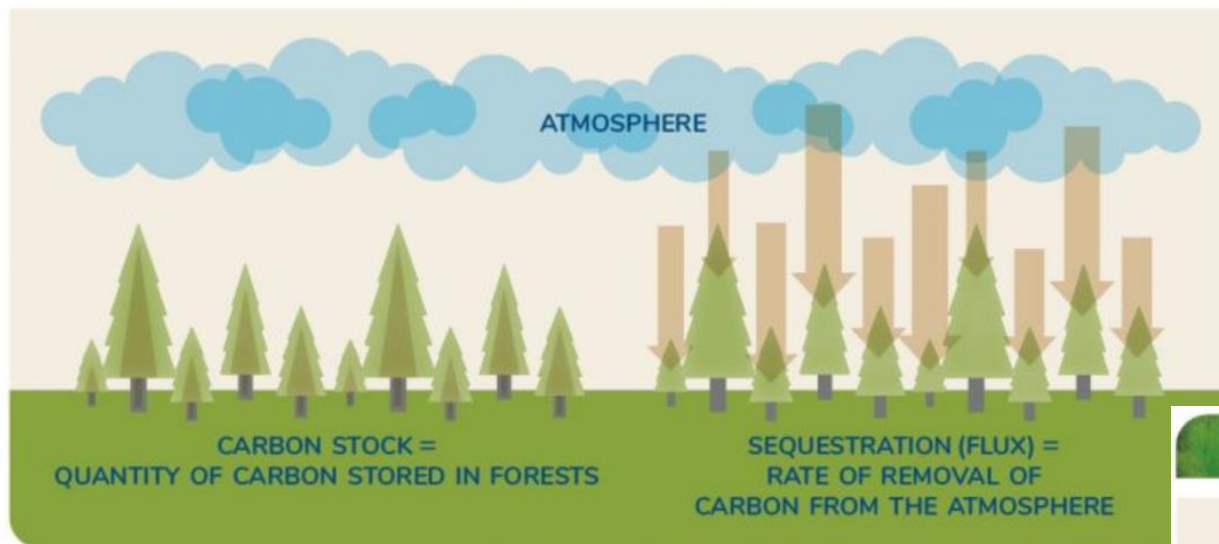


AFRC

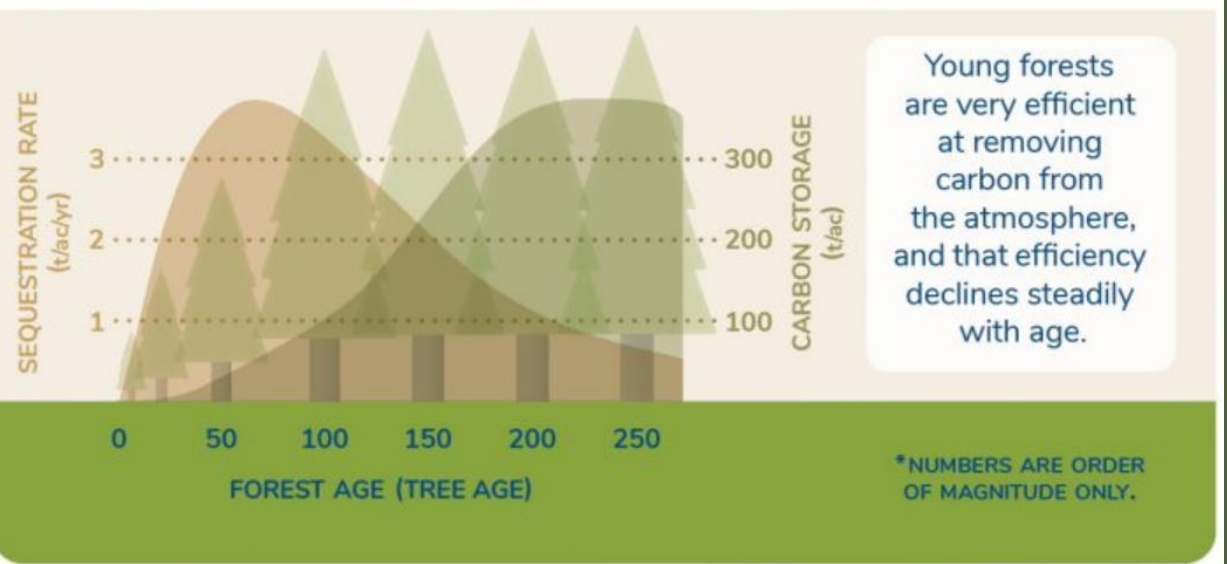


CARBON STORAGE vs SEQUESTRATION

STORING vs. SEQUESTERING CARBON



SEQUESTRATION RATE AND CARBON STORAGE OVER AGE*



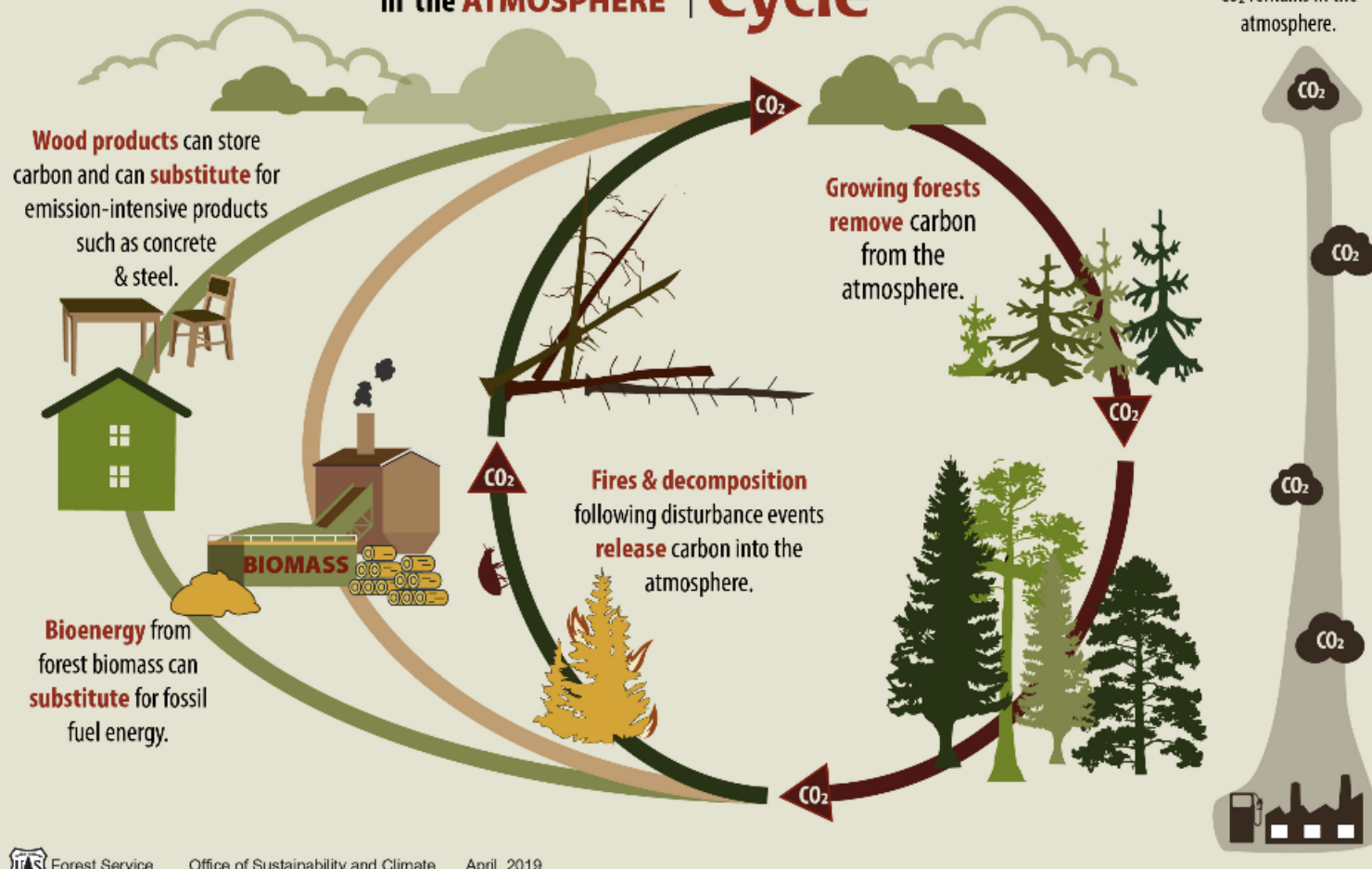
Source: https://www.ncasi.org/wp-content/uploads/2021/01/NCASI22_Forest_Carbon_YoungVsOld_print.pdf

CARBON, FORESTS AND WOOD

USDA
United States Department of Agriculture

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

Carbon Cycle



Forest Service Office of Sustainability and Climate April 2019

IPCC Special Report (2019) -
“Sustainable forest management can maintain or enhance forest carbon stocks, and can maintain forest carbon sinks, including by transferring carbon to wood products, thus addressing the issue of sink saturation. Where wood carbon is transferred to harvested wood products, these can store carbon over the long-term and can substitute for emissions-intensive materials reducing emissions in other sectors.”

<https://www.ipcc.ch/site/assets/uploads/2019/11/SRCCL-Full-Report-Compiled-191128.pdf> -
page 21

Source: <https://www.fs.usda.gov/sites/default/files/TimberHarvest-Carbon-3pg-v3.pdf>

CARBON, FORESTS AND WOOD

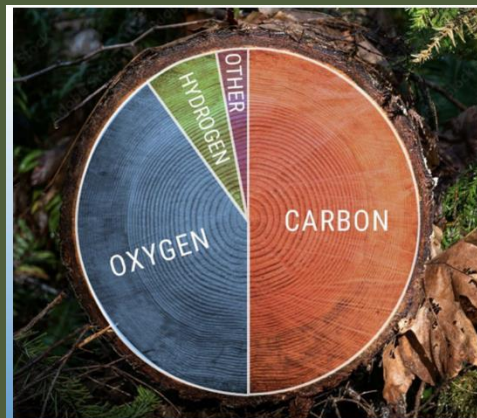
International Scientific Consensus

IPCC (2007): "In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber or energy from the forest, will generate the largest sustained mitigation benefit."

<https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg3-chapter9-1.pdf>

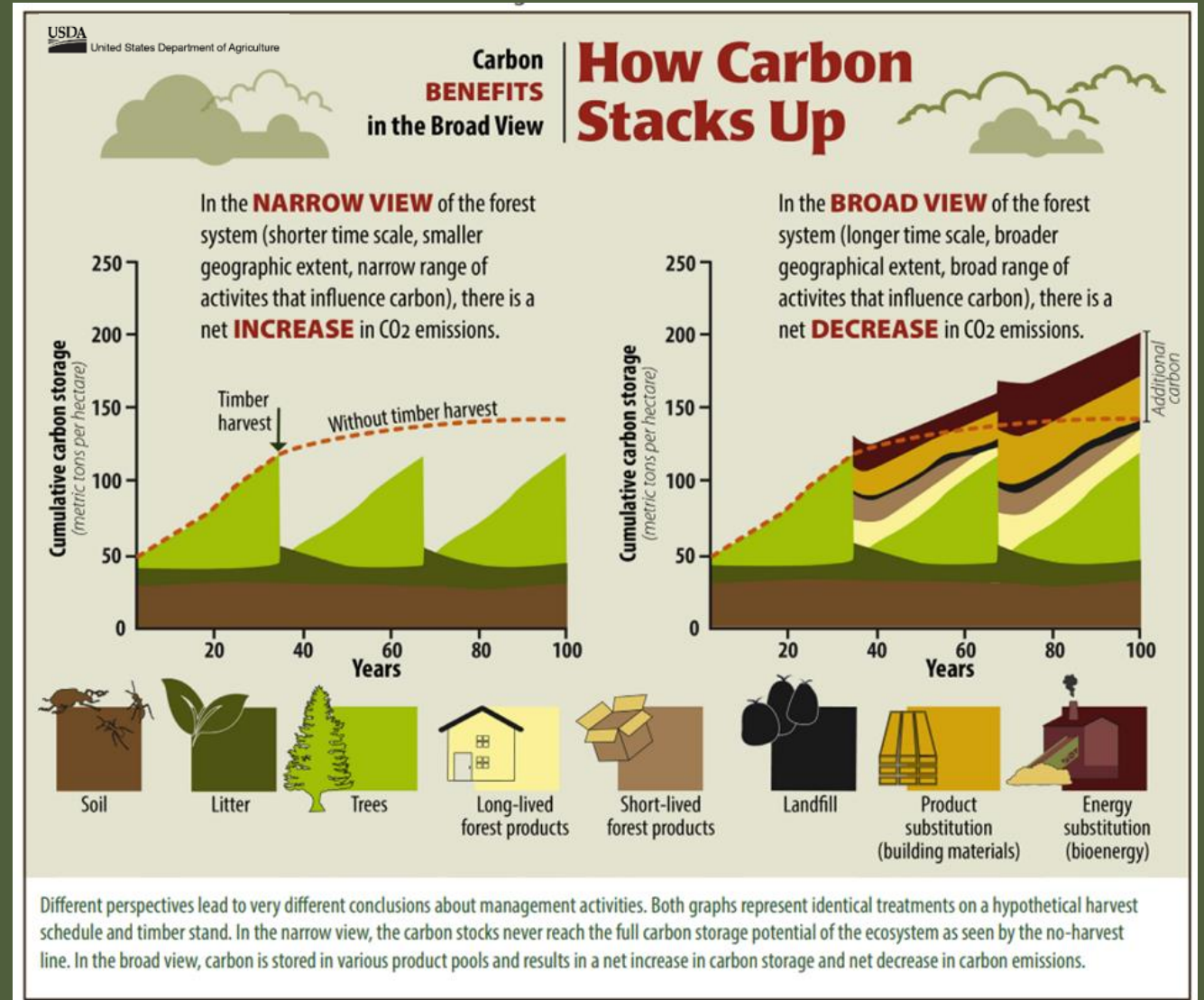
- page 543

IPCC (2022): "...reduced harvest may lead to gains in carbon storage in forest ecosystems locally, but these gains may be offset through international trade of forest products causing increased harvesting pressure or even degradation elsewhere."



The dry weight of tree wood is composed mostly of solid carbon which remains in this solid stored state until the wood decays or is destroyed by burning.

https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter07.pdf - page 84



Source: <https://www.fs.usda.gov/sites/default/files/TimberHarvest-Carbon-3pg-v3.pdf>

GLOBAL RESOURCE NEEDS, CARBON EMISSIONS



UN FAO State of Forests Report (2022): demand for natural resources will double by 2060 due to increases in population and affluence. Report co-author: *“It is clearer than ever before that the increased utilization of wood products is critical to reducing global greenhouse emissions....Wood products over their life cycle are linked to lower levels of greenhouse gas emissions than products derived from materials that aren’t renewable.”*

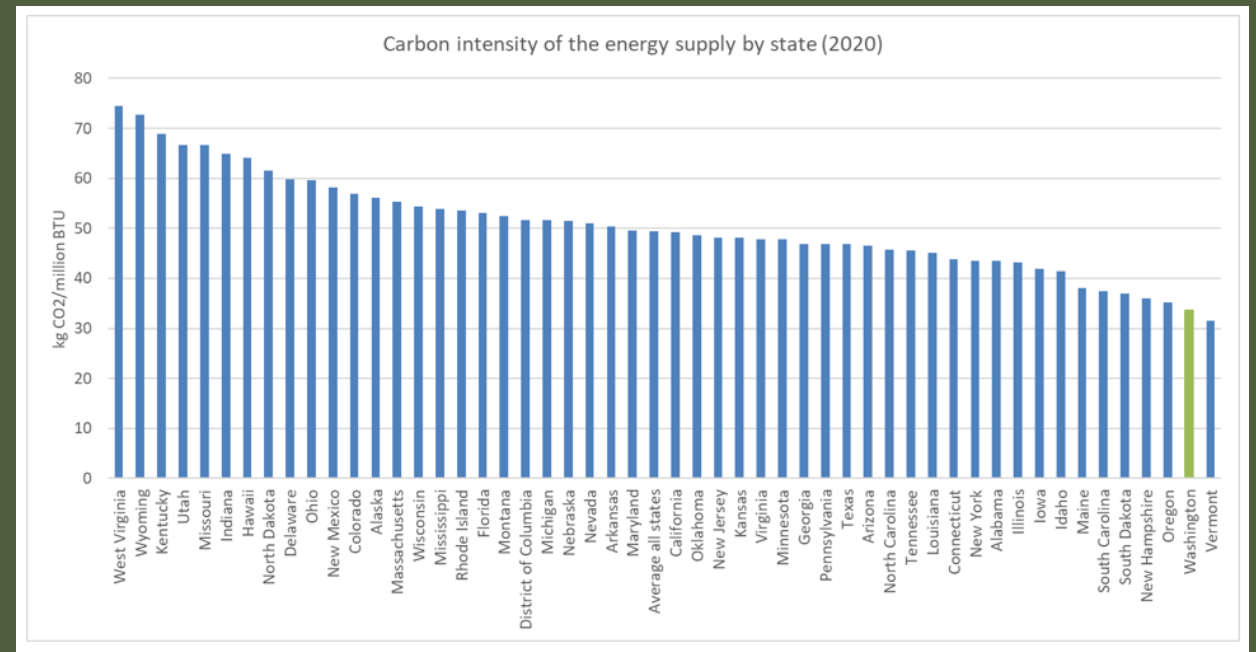
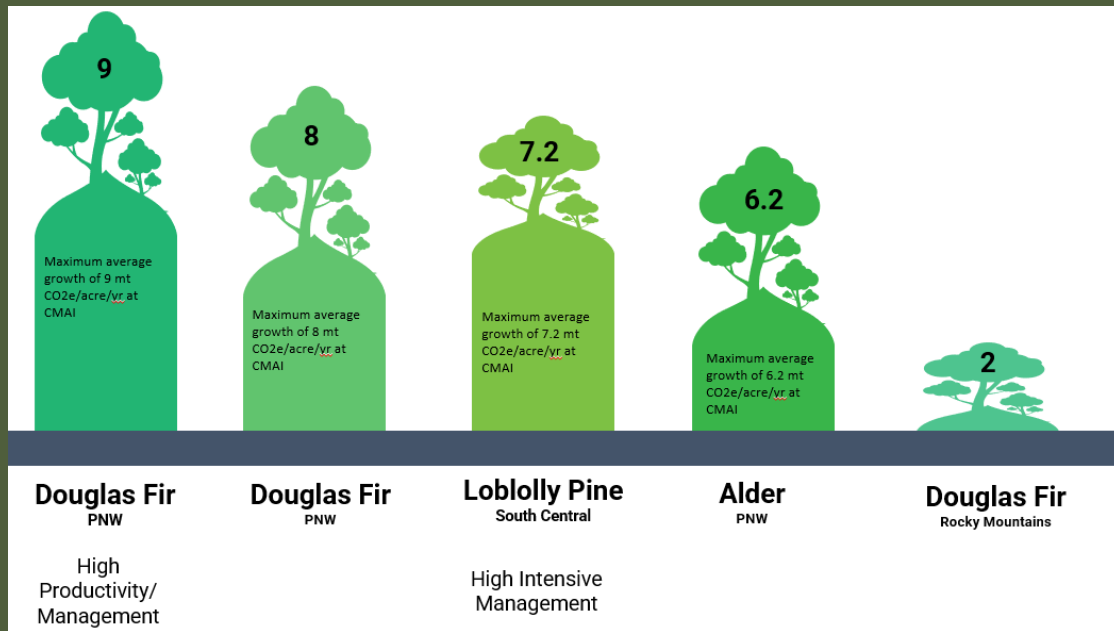
Source: <https://today.oregonstate.edu/news/un-report-co-authored-osu-researcher-advocates-big-increases-sustainable-wood-production>

- ~ 40% of global energy consumption attributed to the construction sector.
- On average, the embodied energy of wood buildings is 20–60% lower than for concrete and steel buildings.
- 8% of global emissions come from concrete.

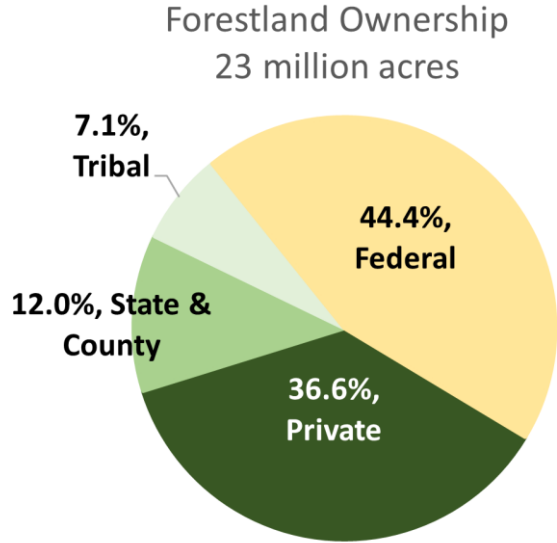


GLOBAL RESOURCE NEEDS, CARBON EMISSIONS

Washington State: Ideal For Growing Forests and Producing Wood Products w/ Strong Environmental Protections

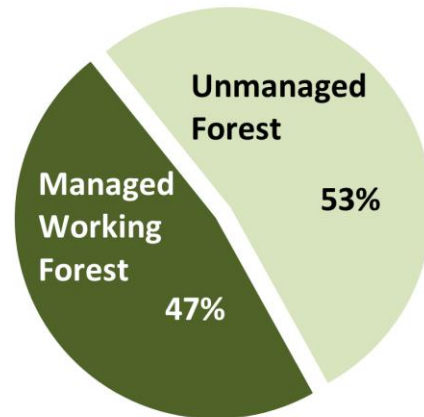


WASHINGTON FOREST LAND

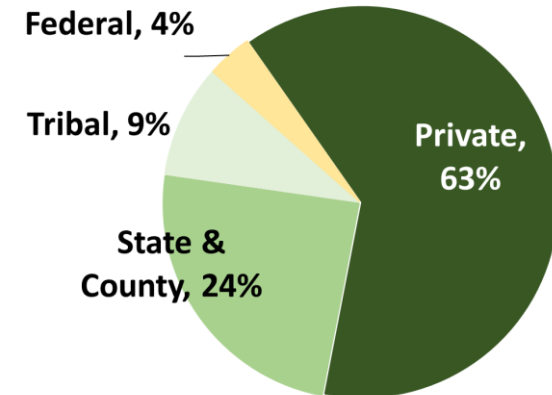


WA STATE	Total	National Forest	National Parks and Other	State, County & Local Govt	Private/Tribal
Average age of forest	92	126	192	69	53
Acres	22,983,438 100%	8,362,390 36%	1,839,558 8%	2,751,704 12%	10,029,784 44%
Number of standing dead trees	650,559,477 100%	358,974,213 55%	55,911,365 9%	78,844,200 12%	156,829,700 24%
Number of live trees	9,214,190,443 100%	3,840,224,388 42%	754,905,993 8%	1,015,349,742 11%	3,603,710,321 39%

Washington State Forestland
23 million acres

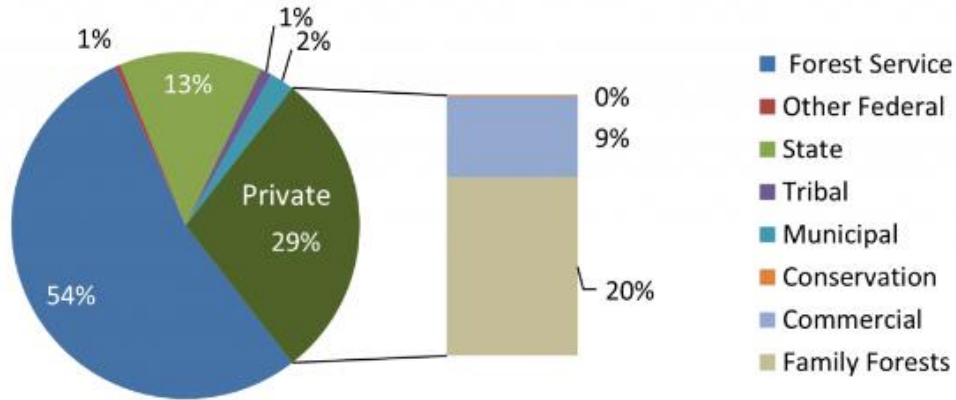


2021 WA Total Timber Harvest 3 BBF

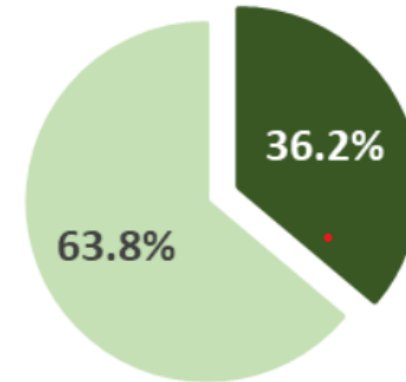


SNOHOMISH COUNTY FORESTLAND

Snohomish County Forestland by Ownership



Snohomish



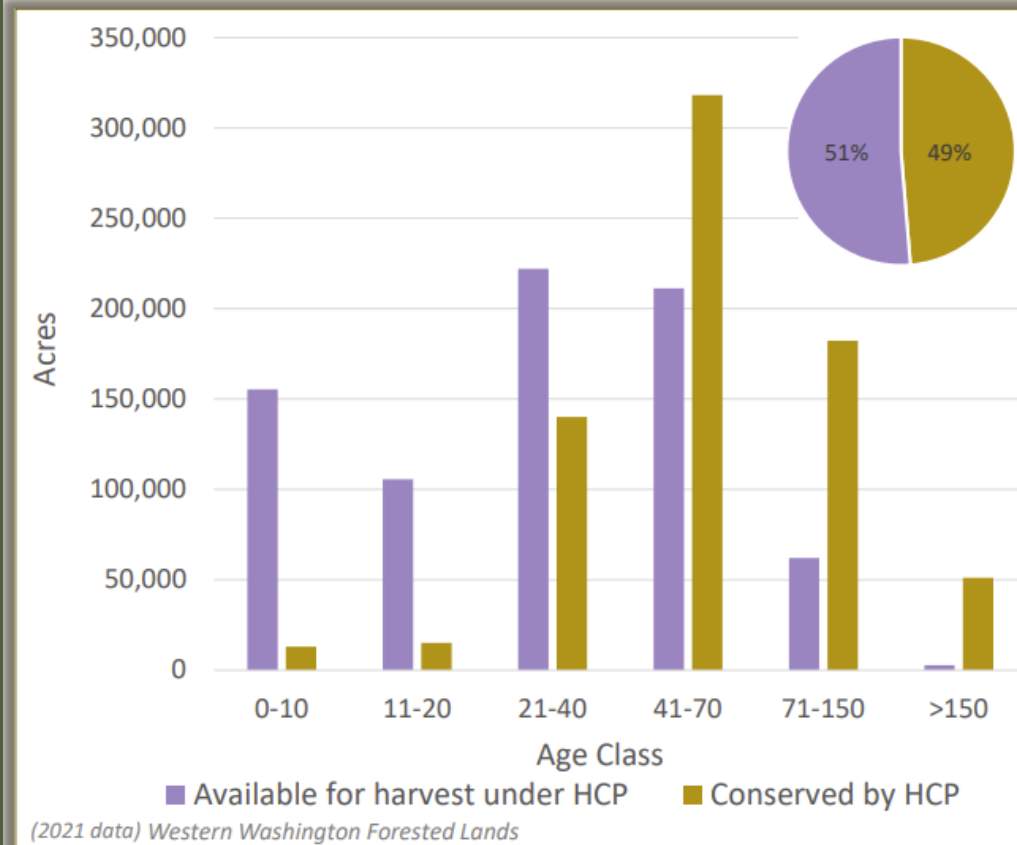
■ Working Forest ■ Restricted Forest

Snohomish County	Total	National Parks and Other			
		National Forest	Federal	State, County & Local Govt	Private
Average age of forest	138.2	194.5	51.9	63.5	47.9
Acres	1,065,150	573,878	4,849	166,175	320,248
Number of standing dead trees	20,293,253	11,978,846	378,652	4,087,806	3,847,949
Number of live trees	403,060,371	269,898,974	2,944,139	54,829,848	75,387,411

Source: [County Carbon Charts - Washington Forest Protection Association \(wfpa.org\)](http://www.wfpa.org)

OLDER FORESTS AND THE HCP

Acres Available for Harvest and Conserved under the HCP Strategies



- State Forest Practice Rules
- 1997 State Lands Habitat Conservation Plan
 - Clean Water Act approval
 - ESA approvals
- 2006 Riparian Strategy
- 2019 Murrelet Amendment
- Policy for Sustainable Forests
 - Protects all old growth on DNR lands
 - Structurally unique stands

CONSERVATION & PRESERVATION OF OLDER FORESTS

Age Groups Summary	Acres	Percentage of Age Group
Pre-1900 in Conserved	67,500	93%
Pre-1900 in Managed	5,100	7%
TOTAL Pre-1900 Landbase	72,600	100%
1900-1944 in Conserved	100,400	72%
1900-1944 in Managed	39,500	28%
TOTAL 1900-1944 Landbase	139,900	100%
All Pre-1945 Conserved	167,800	79%
All Pre-1945 Managed	44,600	21%
TOTAL All Pre-1945 Landbase	212,500	100%
Younger Forest in Conserved	585,000	43%
Younger Forest in Managed	780,600	57%
TOTAL Younger Forest in Landbase	1,365,600	100%
TOTAL CONSERVED ACRES	752,900	48%
TOTAL MANAGED ACRES	825,200	52%
Grand total acres	1,578,100	100%



93% of Pre-1900 acres are conserved

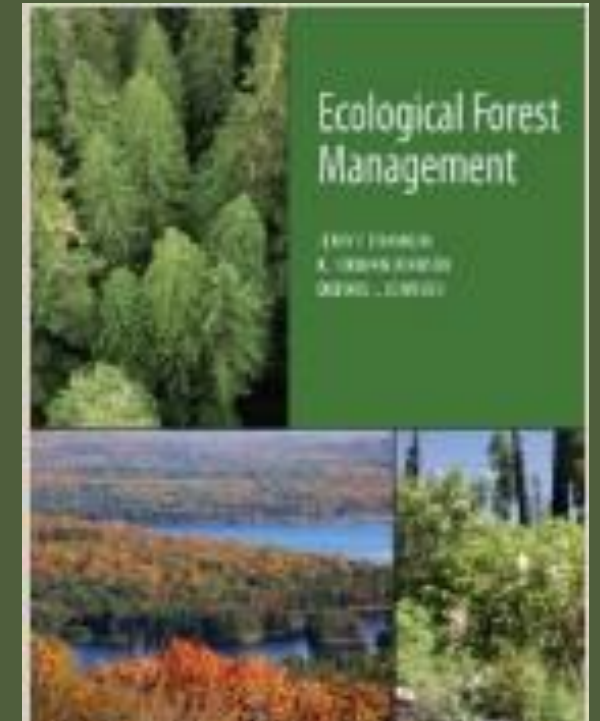
79% of all Pre-1945 acres are conserved

*Values were rounded to the nearest hundredth acre and may not sum to totals due to rounding

DNR FOREST MANAGEMENT

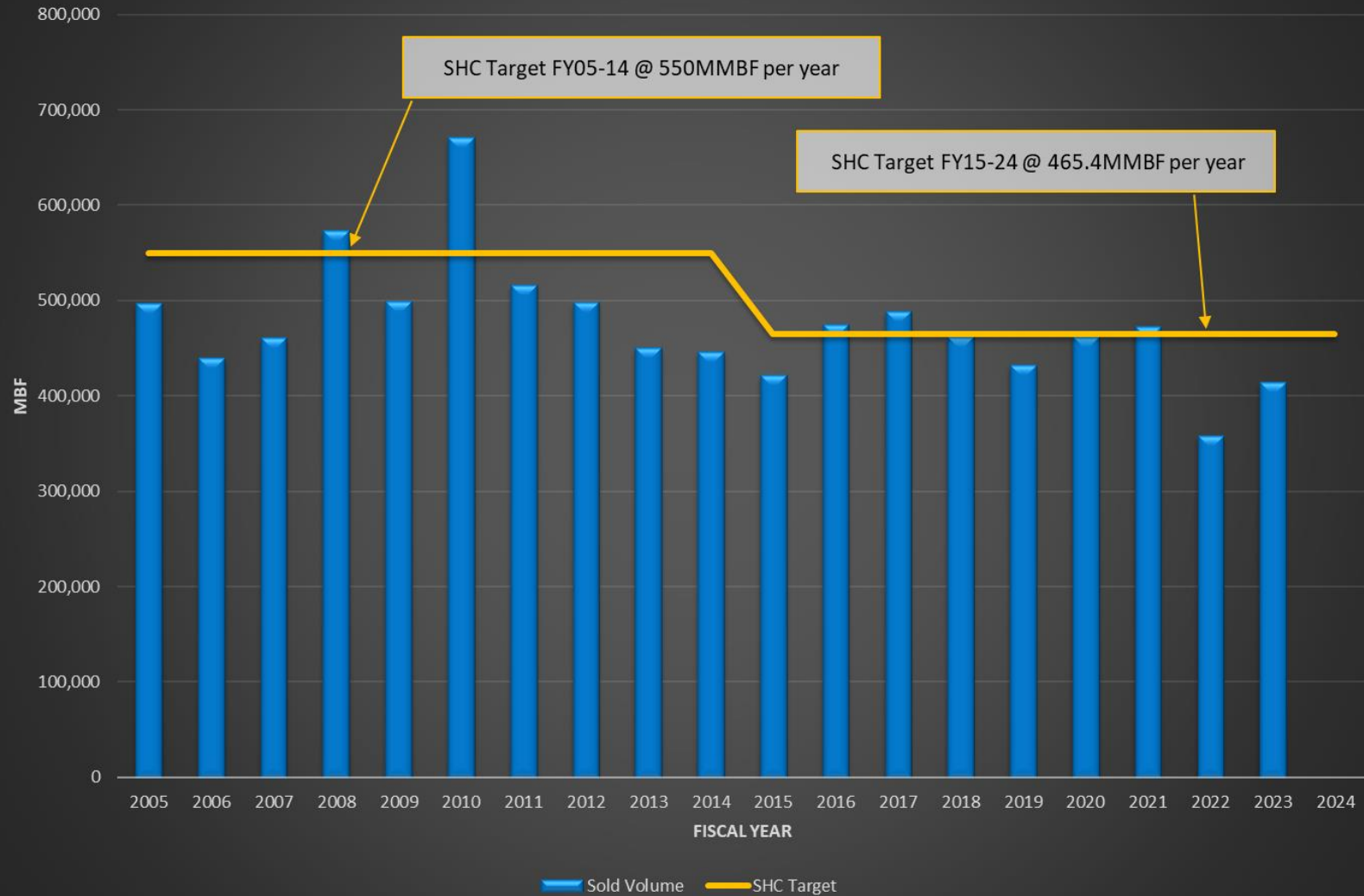
How DNR implements VRH

- DNR among first to operationalize at scale
- Complex shapes/edges
- ~30% average retention in and around harvest units
 - Not a specific objective; rather the outcome of retention/buffer guidelines (riparian, unstable slopes, leave trees/clumps, etc.)
- Riparian buffers & leave tree #'s exceed Forest Practices minima
- Some of this stand-scale retention is separate from (complements) the 48% of conserved lands at landscape scale: Welker/Wells BNR April presentation
- Always prioritize leaving largest and true 'legacy' (older) trees
- Objectives to retain snags & down wood



DNR FOREST MANAGEMENT

DNR West Side Sold Volume by Fiscal Year



SNOHOMISH COUNTY FOREST TRANSFER LANDS

2018 - 2022 DNR Sale of Timber Distributions

Fund	Fund/District Name	Amount
2	General Fund	2,555,512.13
102	County Road	4,447,085.14
103	River Management	14.21
124	Human Services	53,714.51
185	Conservation Futures Tax Fund	113,890.85
662	State Schools	11,012,370.98
724	School 16 Arlington Sch	1,650,783.29
726	School 63 Index Sch	174,049.87
727	School 103 Monroe School	416,456.63
728	School 201 Snohomish Sch	4,358,464.26
730	School 311 Sultan Sch	3,890,375.47
731	School 330 Darrington Sch	521,737.55
732	School 332 Granite Falls Sch	712,359.41
773	Fire Dist No 4	350.03
774	Fire Dist No 5	70,574.44
775	Fire Dist No 7	6,454.41
782	North Cnty Regional Fire Auth	114,234.13
784	Fire Dist No 16	70,084.68
785	Fire Dist No 17	71,504.70
789	Fire Dist No 21	102,611.97
792	Fire Dist No 24	215,123.19
793	Fire Dist No 25	1,124.69
794	Fire Dist No 26	585,710.97
796	Fire Dist No 28	304.06
825	Pub Hosp Dist #1 Maint	709,995.61
828	Monroe Lib Cap Fac Area	12,738.43
829	Snohomish Lib Cap Fac Area	36,550.73
830	Pub Hosp Dist #3 Maint	641,098.62
840	Sno-Isle InterCo Rural Library	1,700,401.80
		34,245,676.76

Snohomish			
Age Class	Acres Conserved by HCP	Operable Acres	Total Acres
0-9	525	7,494	8,019
10-19	589	7,956	8,545
20-39	4,923	11,204	16,128
40-69	9,443	6,589	16,032
70-119	8,855	3,204	12,059
120-169	914	283	1,197
>=170	294	51	344
Total	25,544	36,781	62,325

Source: https://www.dnr.wa.gov/publications/em_bc_bnr_op_cons_sf_transferlands.pdf

8 NEW SECTION. **Sec. 3130. FOR THE DEPARTMENT OF NATURAL RESOURCES**

9 Carbon Sequestration Forests (40000405)

10 The appropriation in this section is subject to the following
 11 conditions and limitations: \$83,000,000 of the appropriation is
 12 provided solely for the purchase of property to be managed for
 13 increased carbon sequestration and carbon storage through sustainable
 14 harvests and as replacement trust lands for existing encumbered
 15 forested state trust lands; and for structurally complex, carbon
 16 dense, forested state trust lands that may be transferred from trust
 17 status. The amount provided in this section is also to be used to
 18 carry out additional silvicultural activities on state trust lands,
 19 to convene a stakeholder group and conduct additional analysis
 20 related to the management of forested state trust lands, and to cover
 21 department costs to implement this section. Of the amount provided in
 22 this section:

DNR FOREST MANAGEMENT

Pyramid Peak Timber Sale

Clallam County - 32 miles west of Port Angeles

Offered by DNR April 2020

288 Acres

Successful Bid Price \$ 1,751,359

DNR Volume Sold

Hemlock 6,903 MBF

Douglas-fir 2,504 MBF

Red Alder 935 MBF

Red Cedar 505 MBF

Silver Fir 111 MBF

TOTAL 10,958 MBF

Destinations of logs from sale	# of Truckloads	# of Employees at location
SPI Shelton	999	293
SPI Burlington via Port of Port Angeles	414	205
Interfor	338	127
Port Angeles Hardwoods	249	92
Alta - PA then transferred to Shelton and/or Morton	70	80
Port Townsend Paper via port Angeles	361	300
Evergreen Fiber (Herman Bros.)	18	120
TOTAL Log truck loads Through 8-15-2023	2449	1217

Price Paid to get Timber Sale Delivered to Initial Destination of Logs

Stumpage (price of timber)	\$ 1,751,359
Mandatory DNR Road Fees	\$ 284,908
Road Building/Maintenance (TLC Excavation)	\$ 884,428
Road Use Permit (Merrill & Ring)	\$ 30,000
Professional Services	\$ 5,395
Logging (Oakes Logging)	\$ 1,705,781
Trucking (Various mostly Clallam Based)	\$ 1,454,060
Port of PA/Barge/Everett Log yard	\$ 322,850
Excise Taxes	\$ 108,937
TOTAL COSTS THROUGH 8-15-2023	\$ 6,547,718

Lumber and plywood products made by all mills are distributed throughout North America and beyond.

QUESTIONS

