



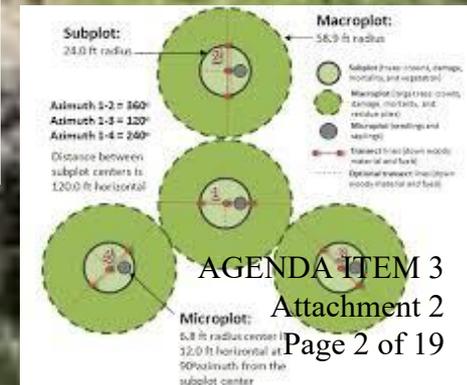
Oregon Forest Ecosystems Carbon Report

*Overview of Information in Draft Forest Carbon Tables
from USFS Forest Inventory and Analysis
For the 2016 Inventory Period*

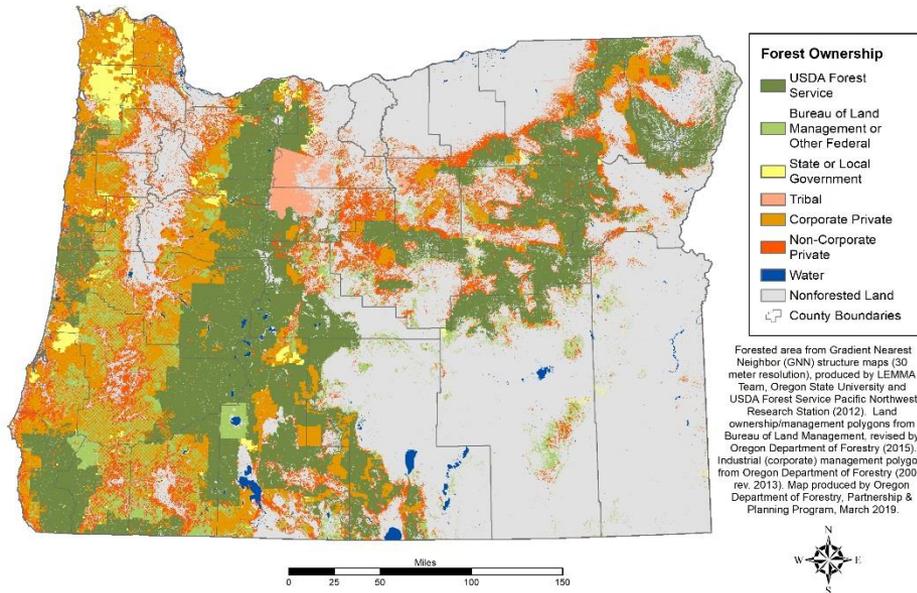


Oregon Forest Ecosystems Carbon Report

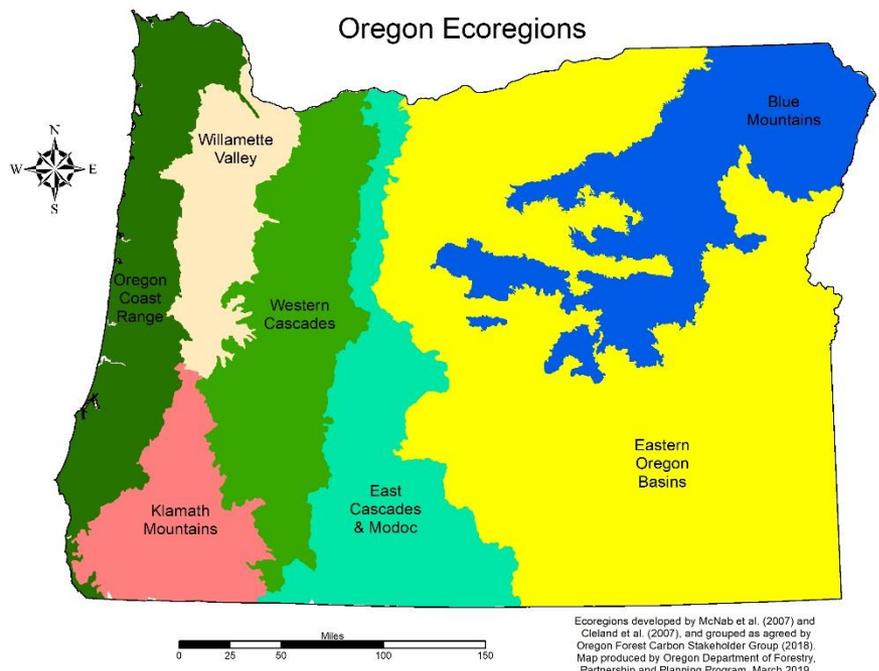
- The report will provide summaries of total forest carbon stocks and flux by ecoregion, ownership, forest type, and forest pool.
- Report is based on measurements collected by the **USFS Forest Inventory and Analysis Program** on forest inventory plots in Oregon From 2001 to 2016
- 10% of all plots are measured each year and again at 10 year intervals.



Oregon Forest Ownership



Oregon Ecoregions





Forest Carbon Stocks

- **Live trees:** Based on FIA regional biomass equations, adds foliage
- **Standing dead trees:** Same as live trees, including reductions for decay
- **Understory vegetation:** As modeled and populated in FIA DataBase
- **Down wood debris:** Use collected measurements and National FIA estimation protocol, piles not included
- **Forest floor:** Use collected measurements and national estimation protocol
- **Roots** on live and standing dead trees: Uses National FIA protocol
- **Organic soils:** As modeled and populated in FIA DataBase using Domke et al. (2017)

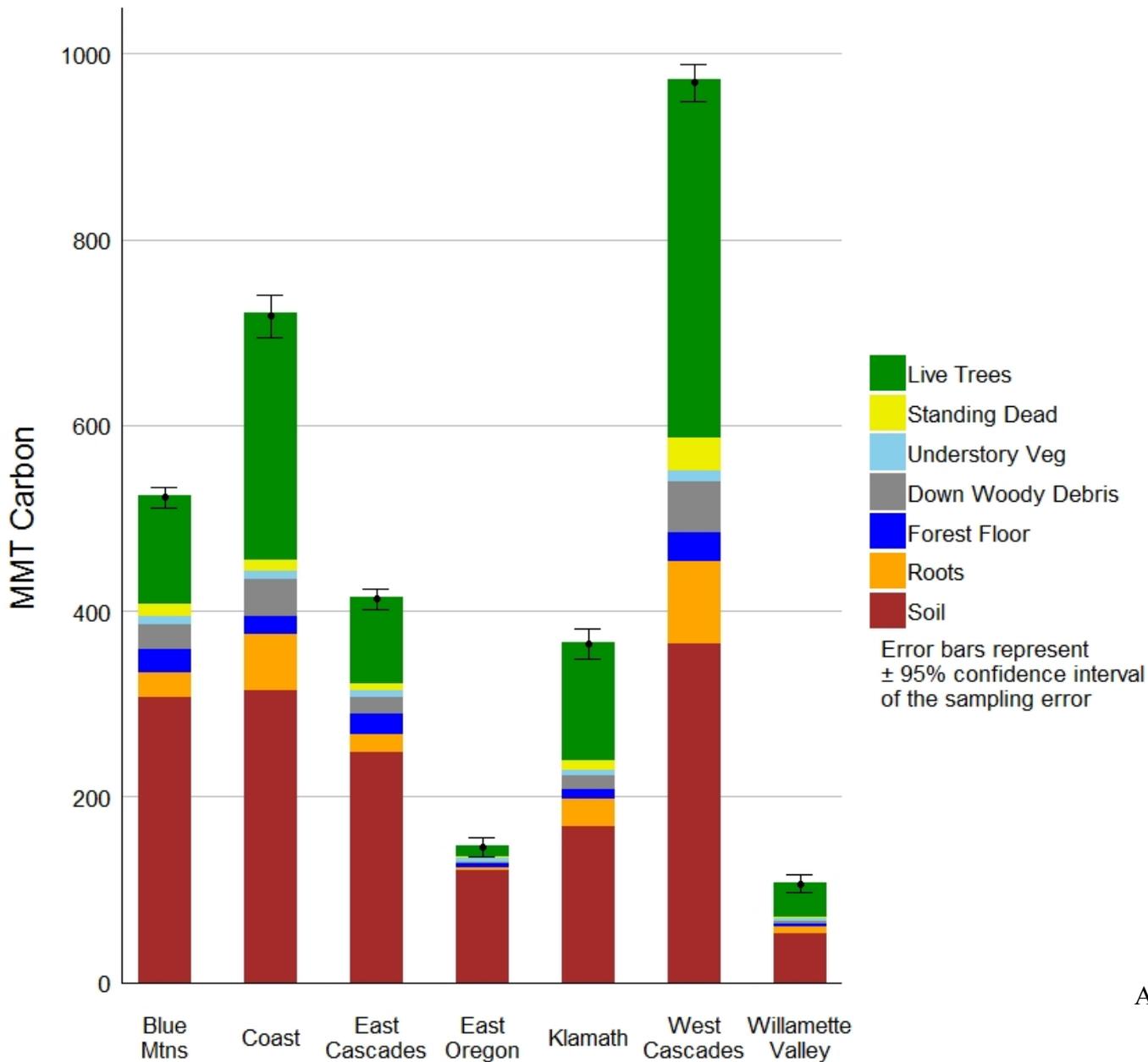


Forest Carbon Stocks

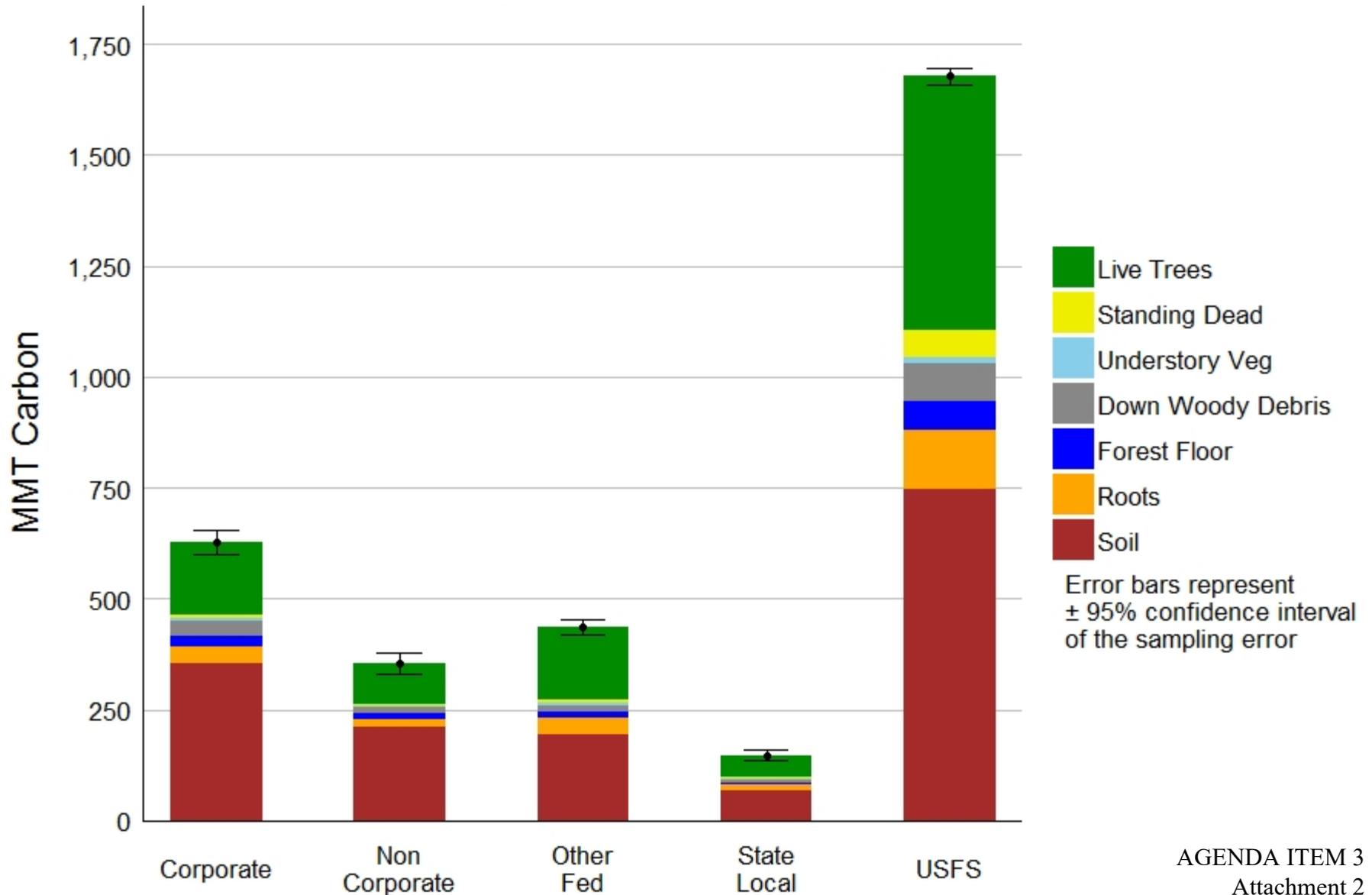
Oregon Statewide Forest Carbon Stocks by Forest Pools, 2007-2016

Forest Carbon Pools	Total Carbon	SE
	million metric tons	
Live Trees	1,039.0	9.6
Standing Dead	79.0	1.6
Understory Veg	34.0	2.1
Down Woody Debris	156.8	1.9
Forest Floor	117.19	0.55
Roots	238.0	2.2
Soil Organic C	1,575.27	7.55
All Pools	3,239.7	16.7

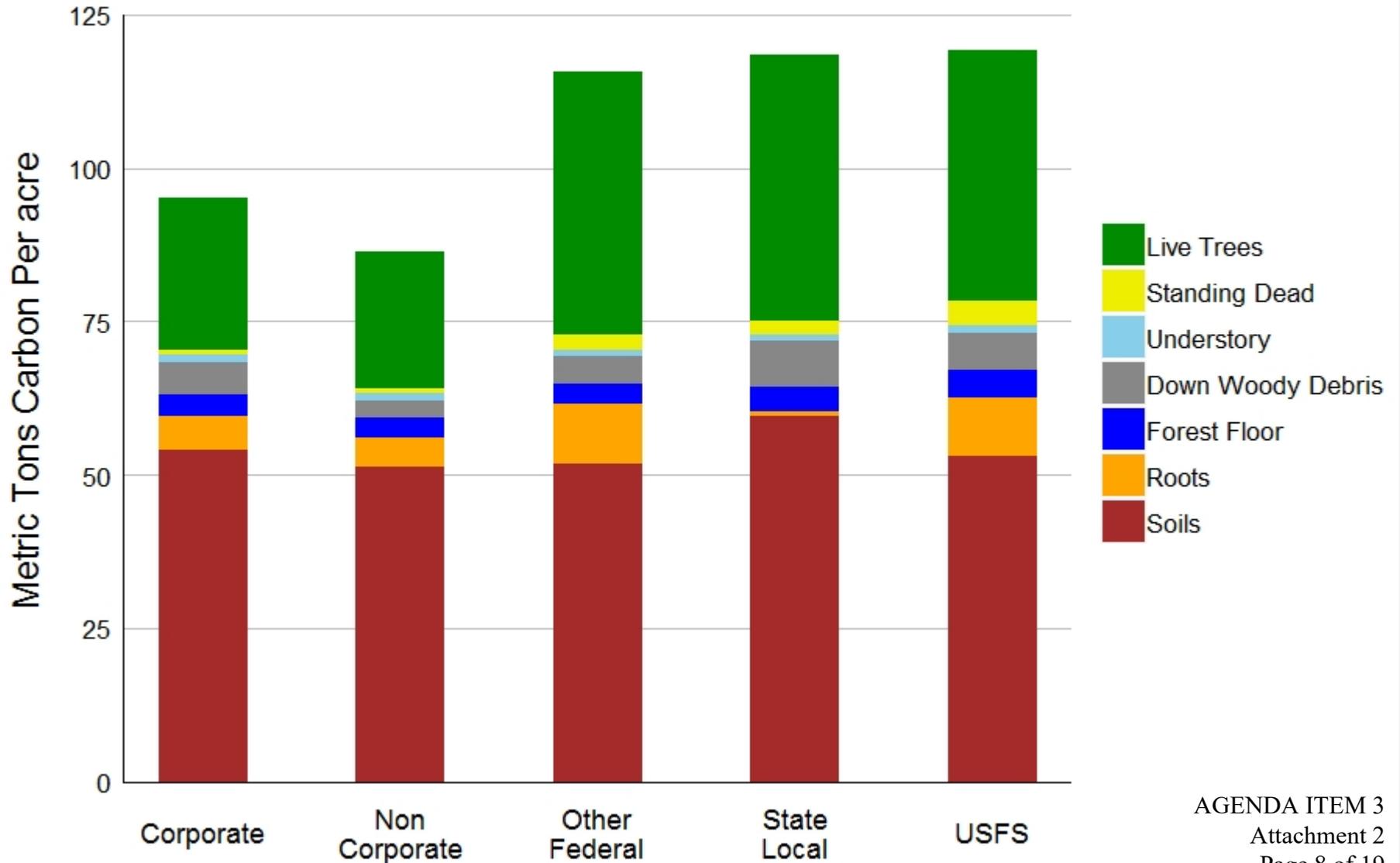
Carbon Stocks in Oregon's Forests by Ecoregion and Pool For the 2016 Inventory Period



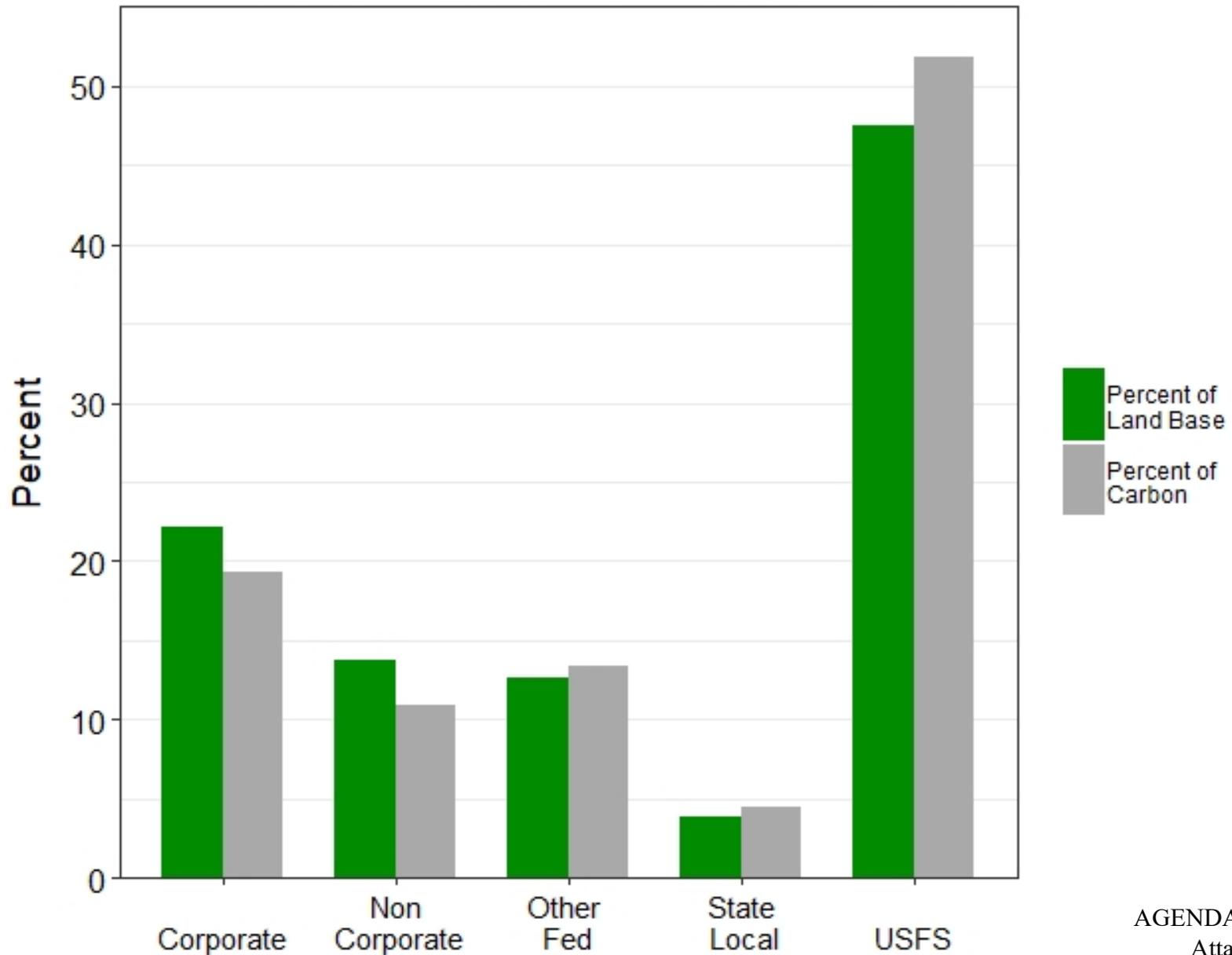
Carbon Stocks in Oregon's Forests by Owner and pool For the 2016 Inventory Period



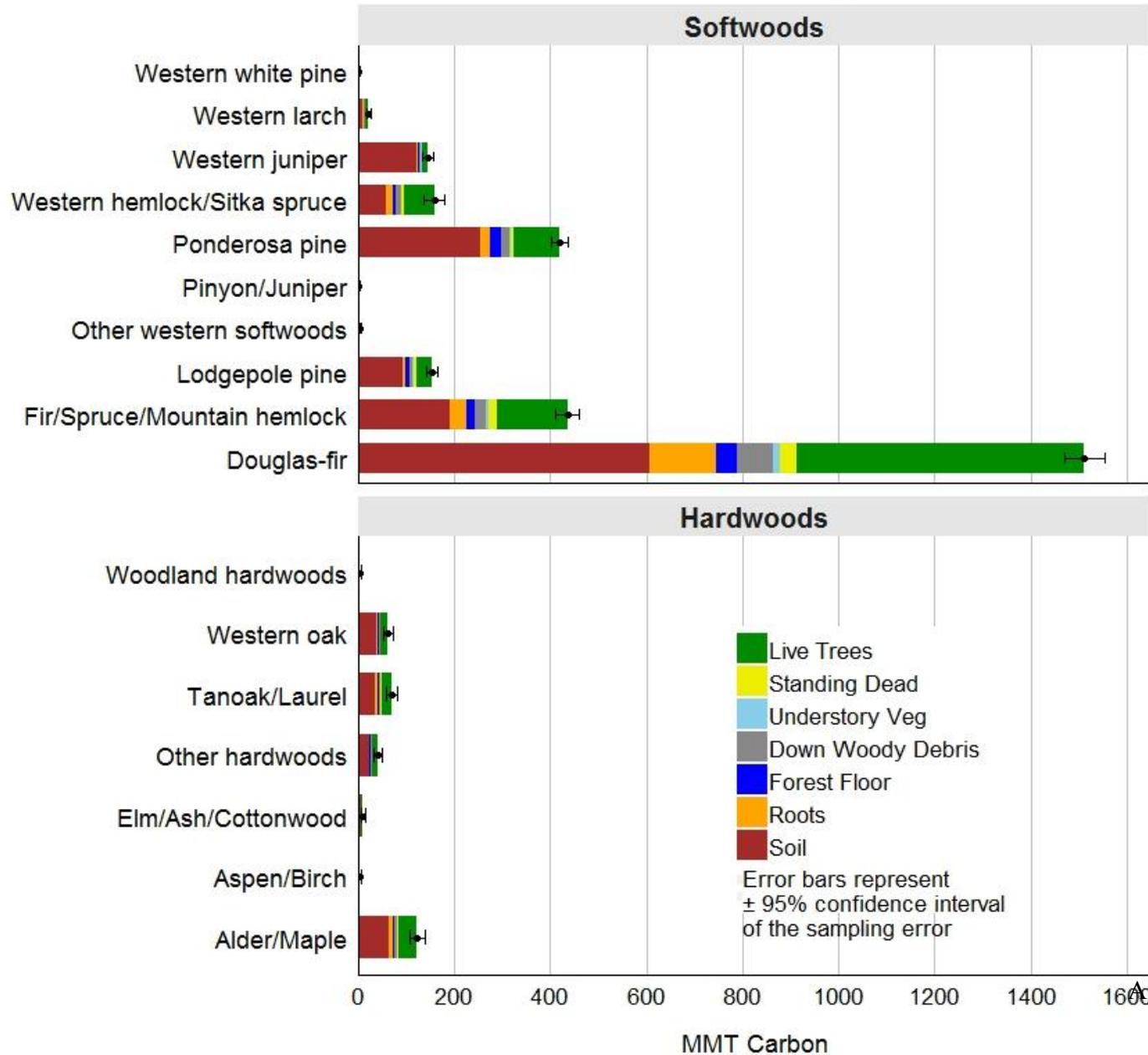
Density of Forest Carbon by Pool and Ownership For the 2016 Inventory Period



Percent of Land Base and Carbon By Ownership



Carbon Stocks in Oregon's Forests by Forest Type and Pool For the 2016 Inventory Period





Forest Carbon Flux

- Every pool of forest carbon has a rate of carbon input and rate of carbon output.
- Flux represents the amount of carbon going into a pool minus the amount going out
- Flux is reported in units of CO₂ equivalents
- Current estimates of forest carbon flux were based on one repeat measurement on 60% of all plots in Oregon.
- 100% of all forest inventory plots will be remeasured by 2020
- Annual forest carbon flux is estimated from actual measurements of growth, removals, and mortality

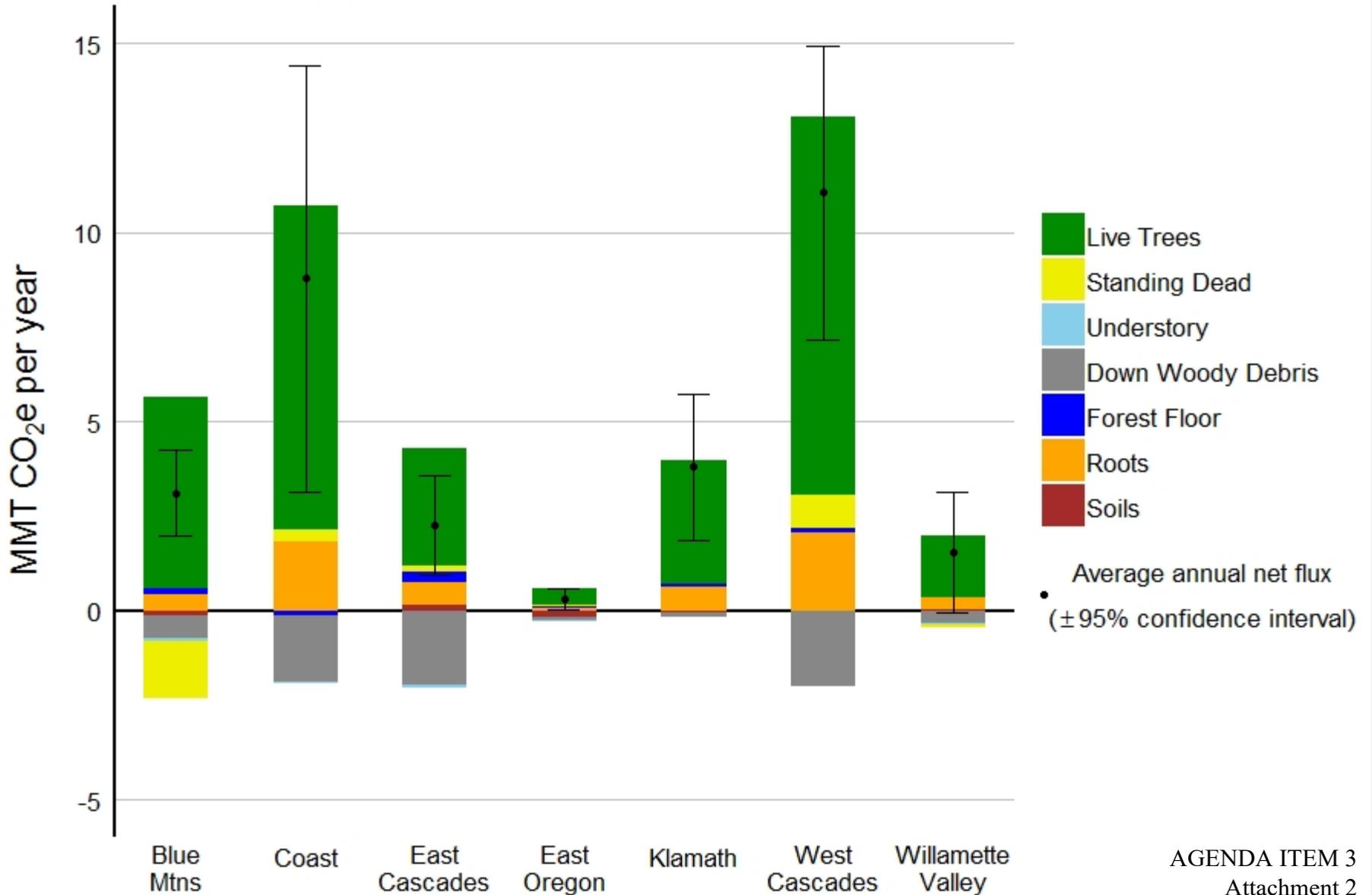


Forest Carbon Flux

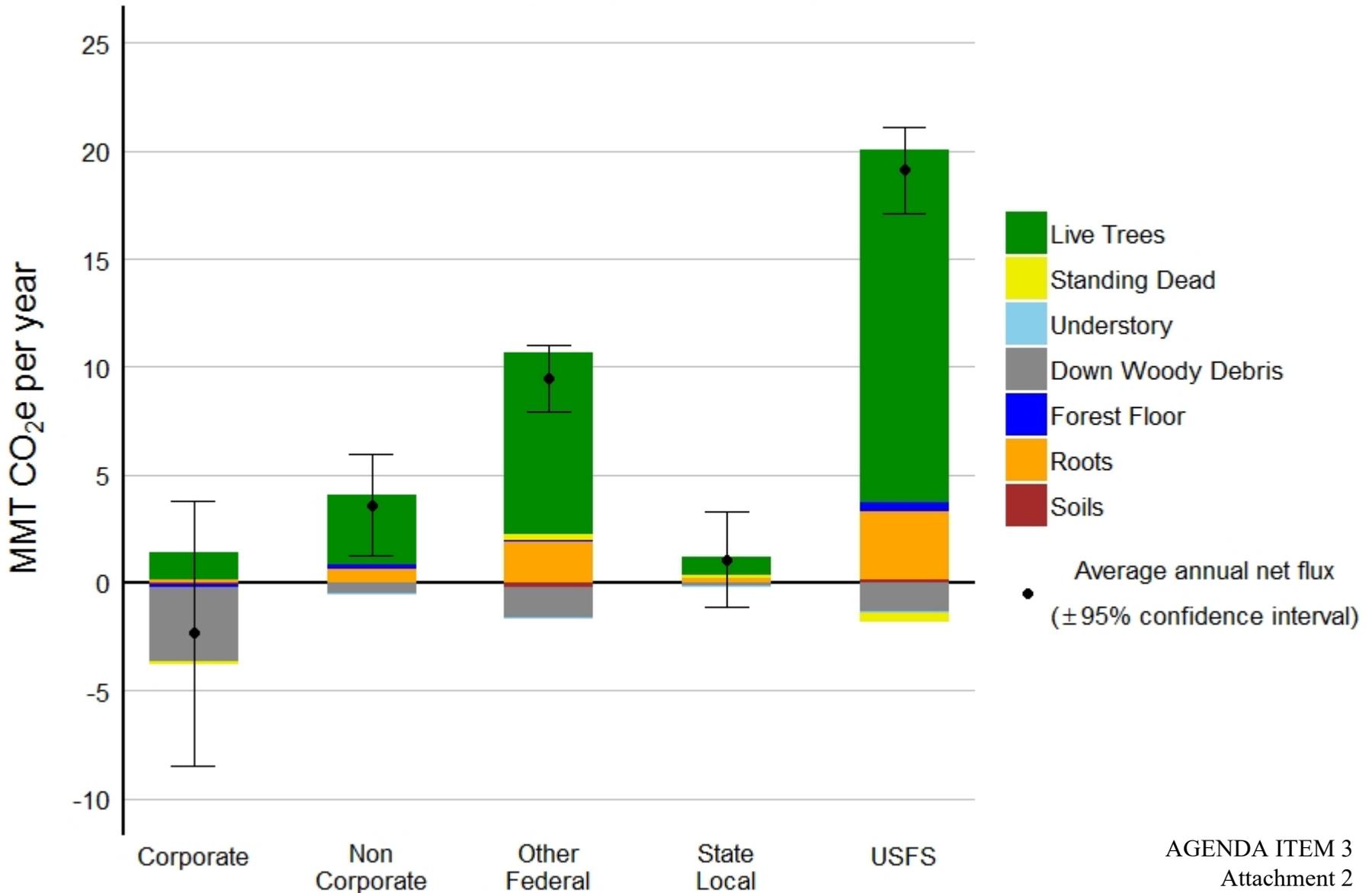
Annual Net CO₂e Flux From Forest Pools in Forest Land Remaining Forest Land, 2001-2006 to 2011-2016

	Net flux	
	Total	SE
	<i>Million Metric Tons CO₂ equivalent/yr</i>	
Forest Carbon Pools		
Live Trees	31.73	2.90
Standing Dead	-.018	0.68
Understory Veg	-0.21	0.04
Down Woody Debris	-6.82	0.82
Forest Floor	0.56	0.13
Roots	5.98	0.69
Soil	-0.17	0.29
Net flux All Pools	30.91	3.77

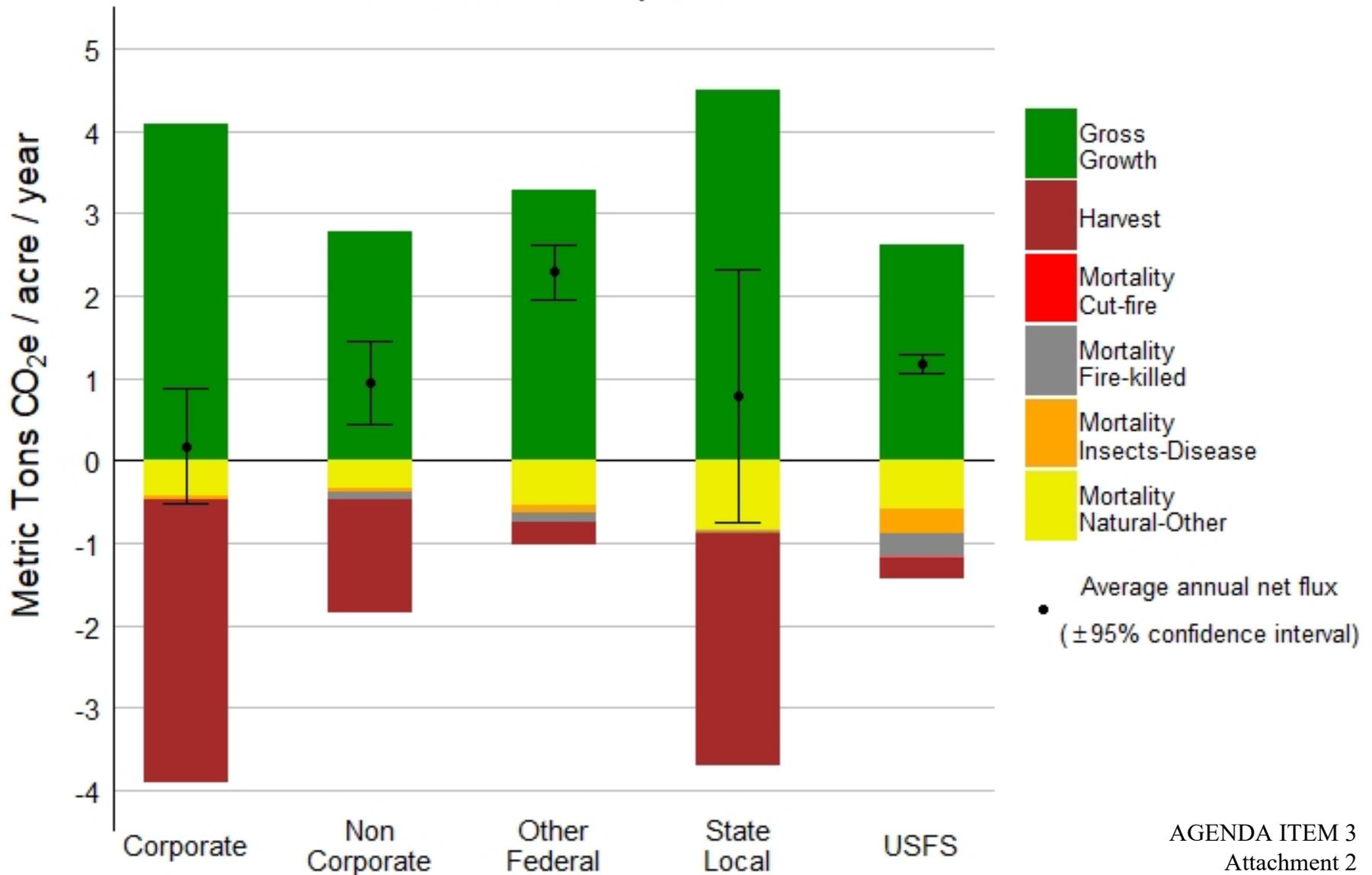
Annual Carbon Flux in Oregon's Forested Ecoregions by Pool For the 2016 Inventory Period



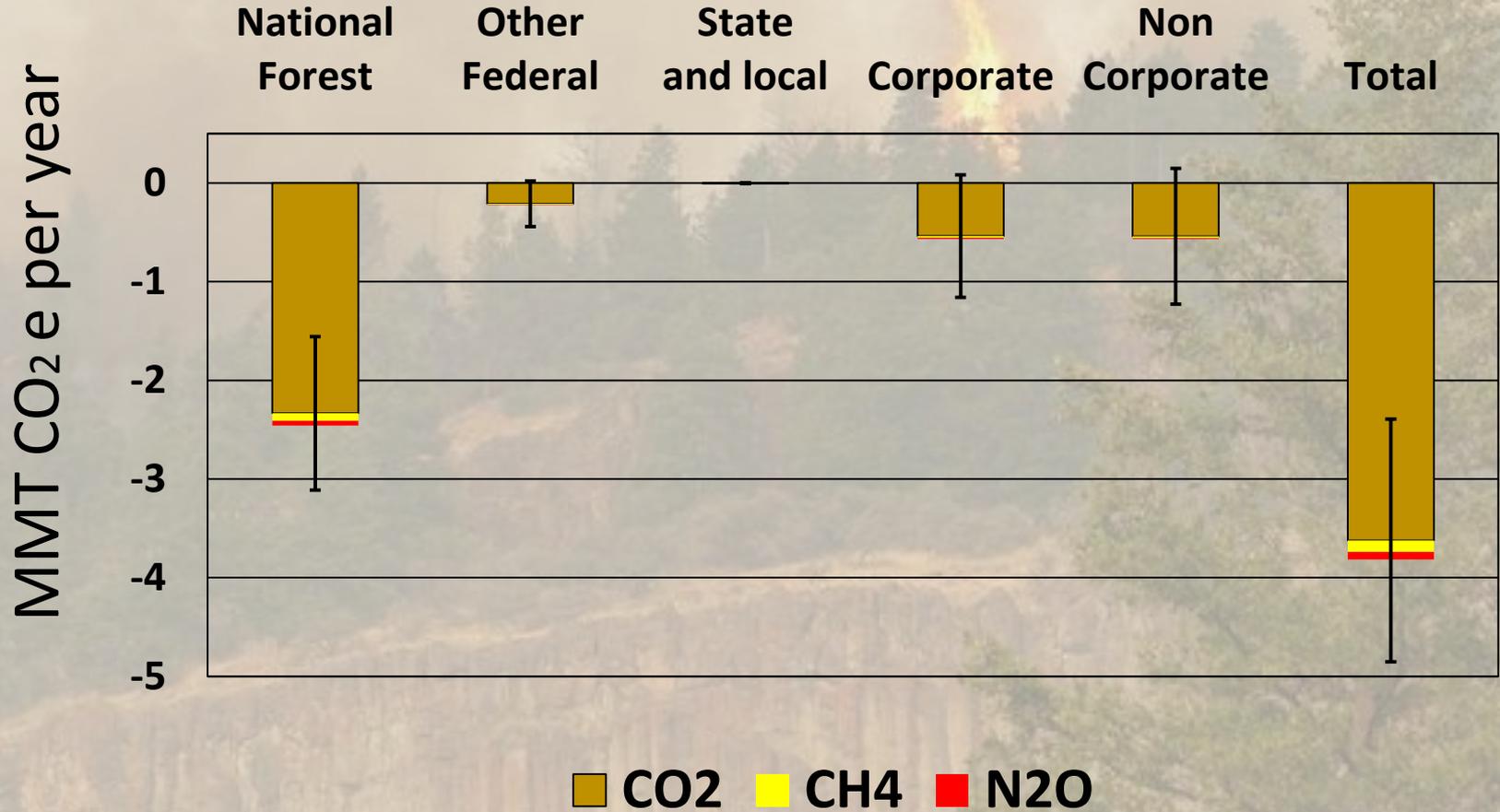
Annual Carbon Flux in Oregon's Forests by Pool and Owner For the 2016 Inventory Period



Annual Flux per Acre in Aboveground Live Trees From Growth, Removals and Mortality by Ownership For the 2016 Inventory Period



Annual Net Emissions of GHG From Fire: All Oregon. 2001-2006 to 2011-2016





Next Steps

- Complete the Forest Ecosystems Carbon Report
- Harvested Wood Products Report later this year
- Research methods for simulating mitigation benefits of forest management alternatives.
- Continued cooperation with California and Washington on forest carbon accounting as well as monitoring the effects of climate change on forest ecosystems



Summary

- Carbon storage in Oregon's forests is about 3.2 billion metric tons
- Each year, Oregon's forests sequester about 30.9 million metric tons of CO₂ equivalents.
- Flux of carbon released from wildfire was smaller than the standard error of 3.8 on the total net flux of 30.9 million metric tons
- Carbon stored in harvested wood products will be analyzed in separate report.



Questions?