

TREES PLUS: WEYERHAEUSER ECOSYSTEM SERVICES REPORTING PROJECT

**2014 Agricultural Outlook Forum
The Economics of Conservation**

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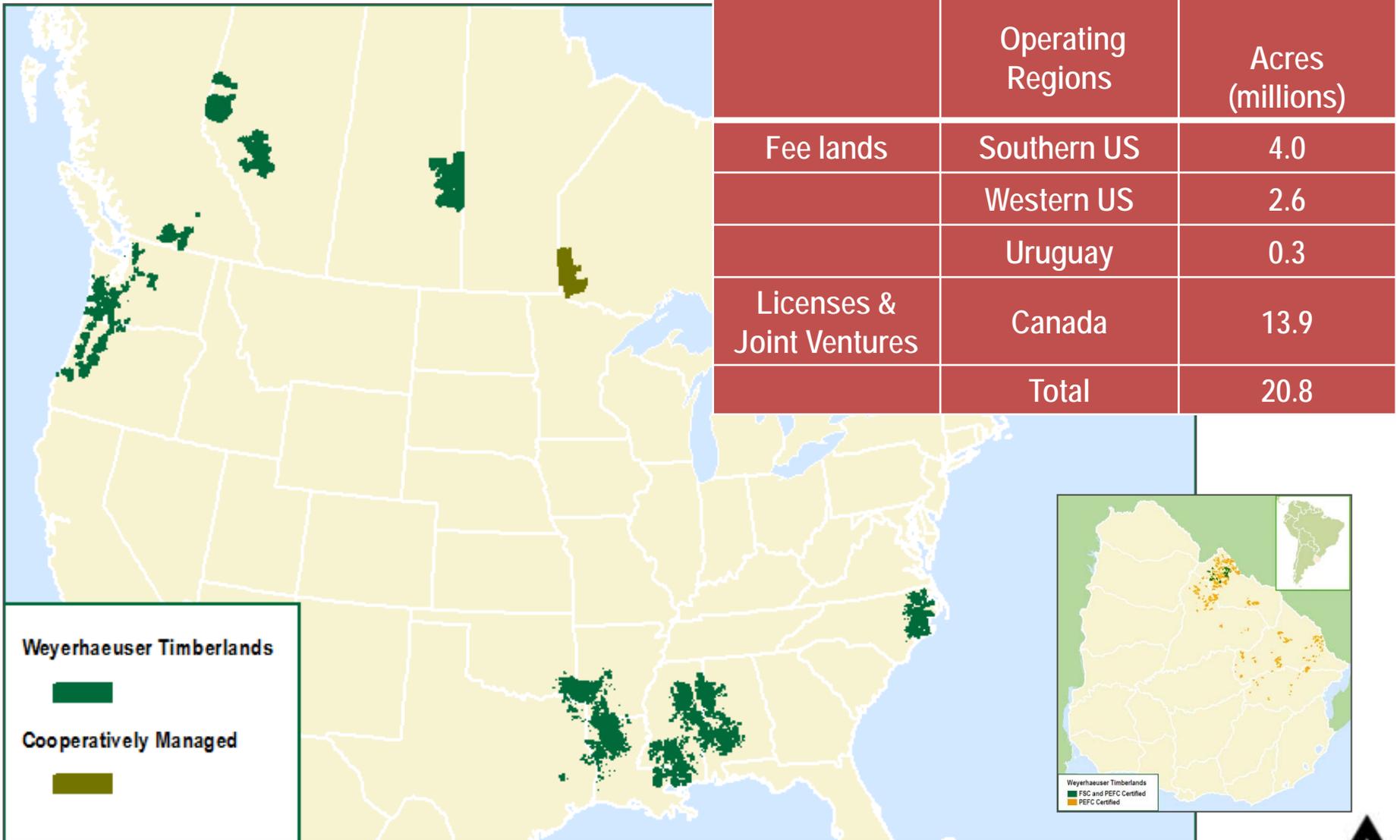


THE PROJECT

- In 2010 Weyerhaeuser's senior managers directed the businesses to propose sustainability goals for 2020
- The Timberlands business offered to test a key hypothesis:
We maintain or enhance the other ecosystem services provided by the lands we manage for timber production
- Our first lesson: be careful what you ask for
 - The literature is full of good ideas on what this means – way more than we can afford to measure and report reliably
 - Our scientists were critical, but so were the operating managers who had to collect and report the data
 - Context matters: ours is forests managed for timber production, and recognizing the global need for intensification
 - The reporting units needed to be readily available (i.e., publically available or already collected internally) and not proprietary in the reported form



THE SCOPE



THE FRAMEWORK



PROVISIONING SERVICES

Products or goods such as water, fish and timber



REGULATING SERVICES

Ecosystem functions such as flood control and climate regulations



CULTURAL SERVICES

Non-material benefits such as recreational, aesthetic, and spiritual benefits



SUPPORTING SERVICES

Fundamental processes such as nutrient cycling and photosynthesis that support the other three categories



THE CHOSEN METRICS

- **Ecosystem services measurements (18 total)**

SUPPORTING	PROVISIONING	REGULATING	CULTURAL
<ul style="list-style-type: none">• Habitat-protected• Habitat-managed• Formal habitat mgmt. zones• Habitat – fish/ habitat aquatics• Soil productivity	<ul style="list-style-type: none">• Fiber – roundwood• Food – mushrooms/ berries• Greenery• Livestock – grazing• Honey production• Biochemical – wood extractives• Fur production• Genetic resources	<ul style="list-style-type: none">• Water regulation• Fire resistance	<ul style="list-style-type: none">• Hunting• Special sites• Education



PROVISIONING SERVICES

Ecosystem Service	Scale	Reporting Unit	2012 Value
Fiber - roundwood harvested	All Weyerhaeuser timberlands	Volume (thousands m ³)	19,421
Food - mushrooms/berries	US West	# of acres covered by permits	1,024,498
Greenery	US West	# of acres covered by permits	778,605
		Tons sold for noble fir boughs	499
Livestock - grazing	Uruguay, Canada, and West	acres of grazing leases	365,522
Honey production	Uruguay and US West	# bee box (hive) leases	19,543
Biochemical - wood extractives	US South and Uruguay	# Tons of soap (potential) based on extractive supply	1,017,570
		# Gallons of turpentine (potential) based on extractives supply	126,240
		# Lbs harvested of turpentine (traditional method)	129,630
Fur production	Canada	# permits	300
Genetic resources (tree improvement)	All Weyerhaeuser timberlands	# improved seedlings planted	52,888,570

19,543

Bee box leases provided from our timberlands in Uruguay and the western U.S.



REGULATORY & CULTURAL SERVICES

Ecosystem Service	Scale	Reporting Unit	2012 Value
Water regulation (quantity and quality)	All Weyerhaeuser timberlands	Percent harvested area planted within 2 yrs;	99%
		Riparian buffer/perennial stream length (m ² /m)* *Based on current public stream layer datasets.	160
Fire resistance	All Weyerhaeuser timberlands	Acres burned (not including prescribed burns)	5,430



99%

Harvested area replanted within two years



61,174

Hunting permits issued in our western U.S. timberlands

Ecosystem Service	Scale	Reporting Unit	2012 Value
Hunting	US South	# people in hunt clubs	56,852
	US West	# of permits in game management units	61,174
Special sites	All Weyerhaeuser timberlands	# special sites	1,314
Education (school tours/groups)	US and Uruguay	# of visitors	162,110

SUPPORTING SERVICES

Ecosystem Service	Scale	Reporting Unit	2012 Value
Habitat - protected	US and Uruguay	Acres, including biotopes, riparian buffers, and wetland mitigation banks	891,446
	Canada		4,954,400
Habitat - managed	US and Canada	Acres of early-successional habitat	2,725,920
		Acres of mid-successional habitat	10,218,300
Formal Habitat Management Agreements	US and Canada	Acres	3,515,250
Habitat - fish habitat/aquatics	US West	# upgraded stream crossings/drainage projects (cumulative)	1,472
Soil productivity	All Weyerhaeuser timberlands	Information from soil productivity research (updated annually)	See link



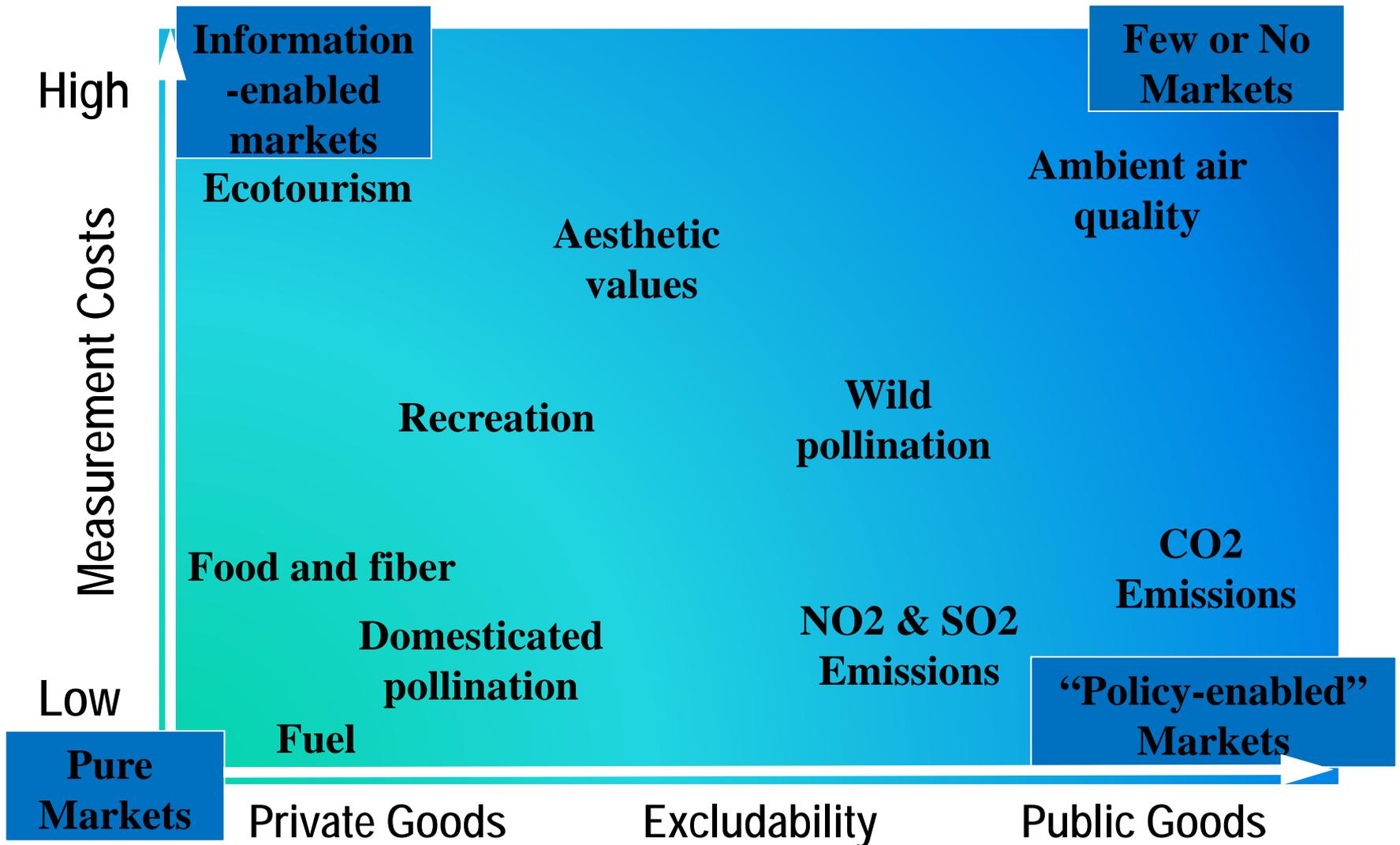
3.5
 Million acres of timberland included in formal habitat management agreements

BUT WHY, REALLY?

- 1. To reduce risk: help people see the ecosystem services our forests provide for free**
(“Natural Capital,” “Net Positive Impact”)
 - So they support and nurture existing markets
 - So they welcome managed forests as a land use
- 2. To increase revenue: explore new markets for ecosystem services**



THE OPPORTUNITIES

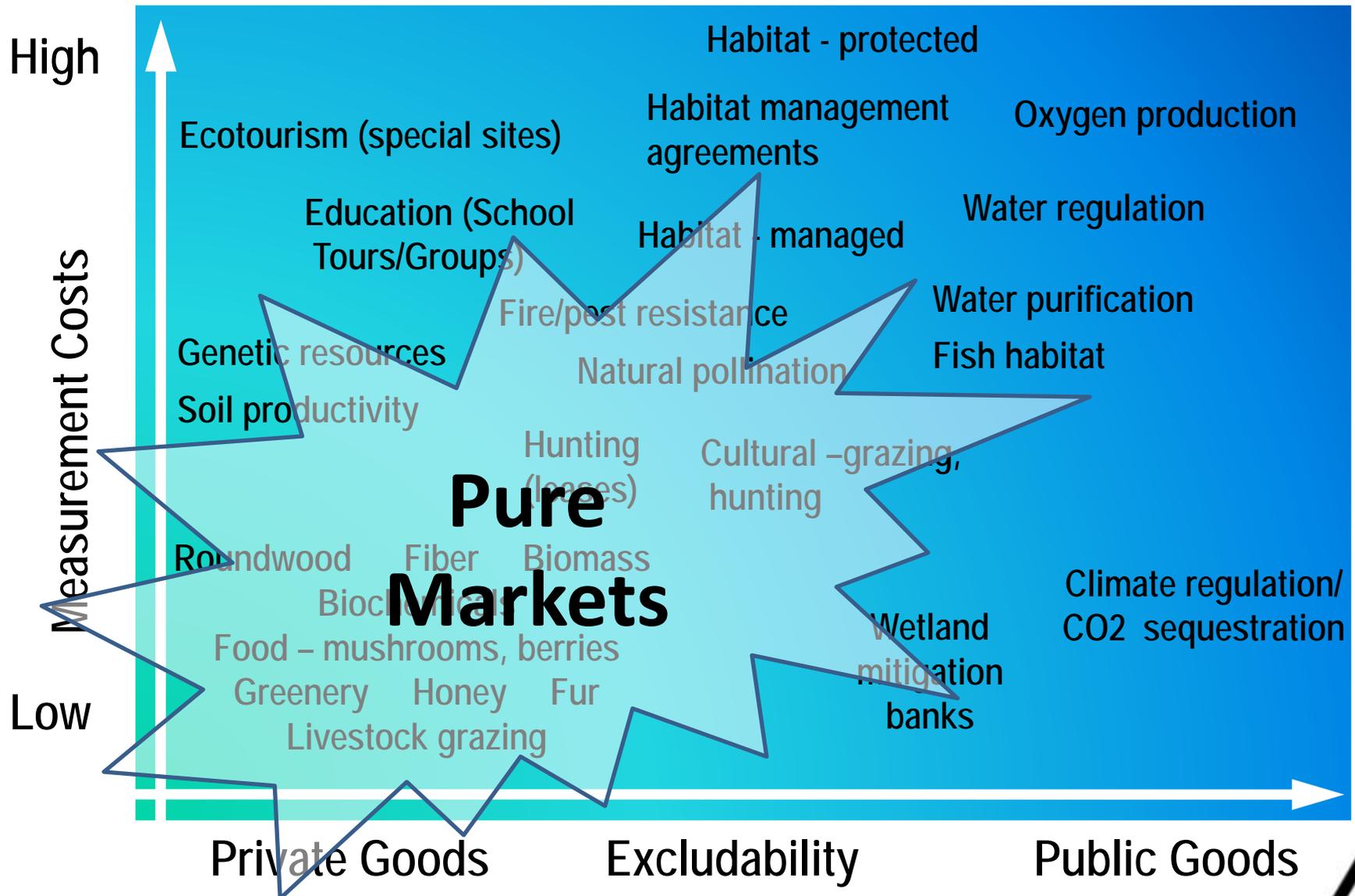


Source: Mark L. Plummer

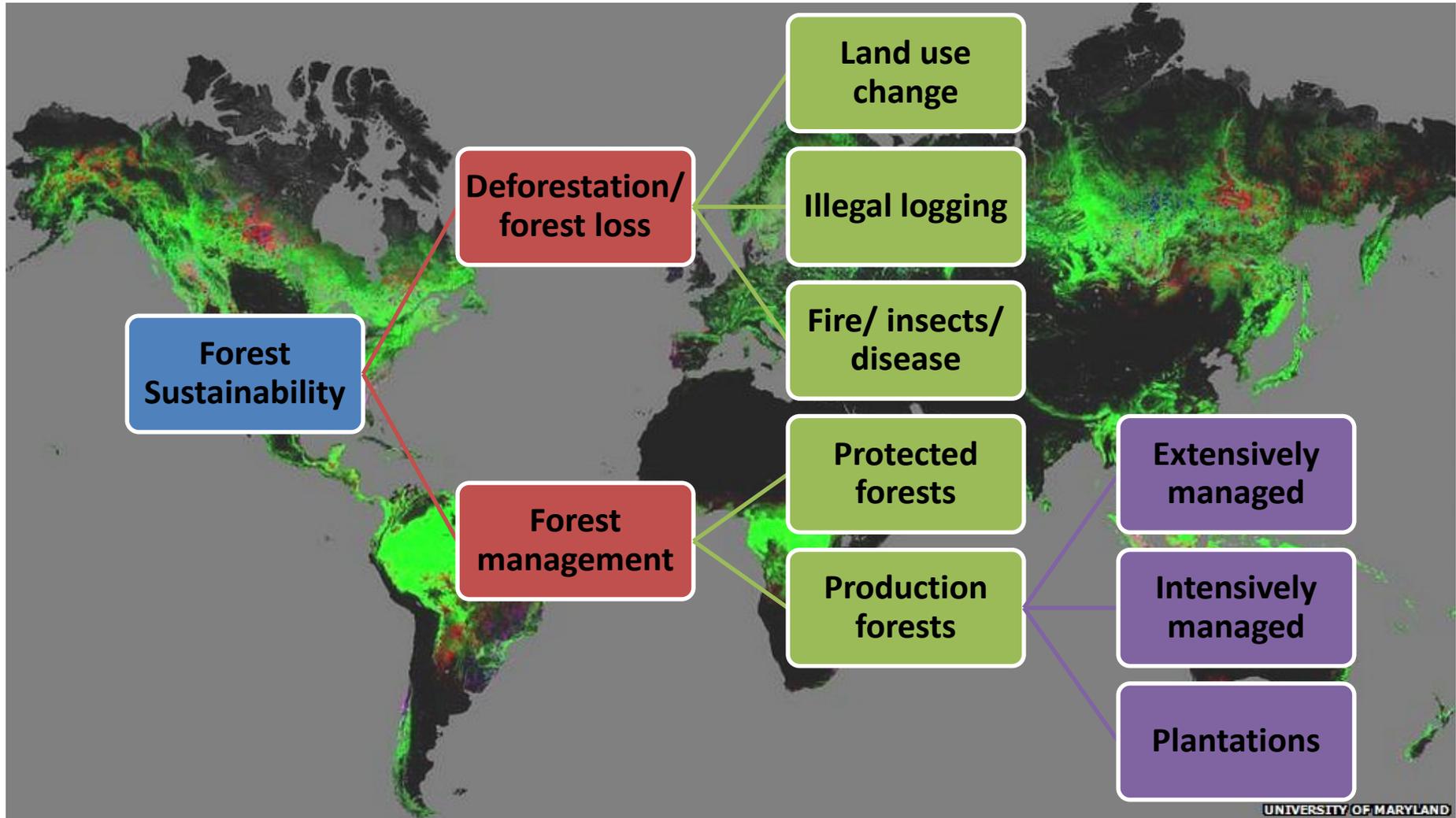
National Marine Fisheries Service



GOAL: NURTURE EXISTING MARKETS



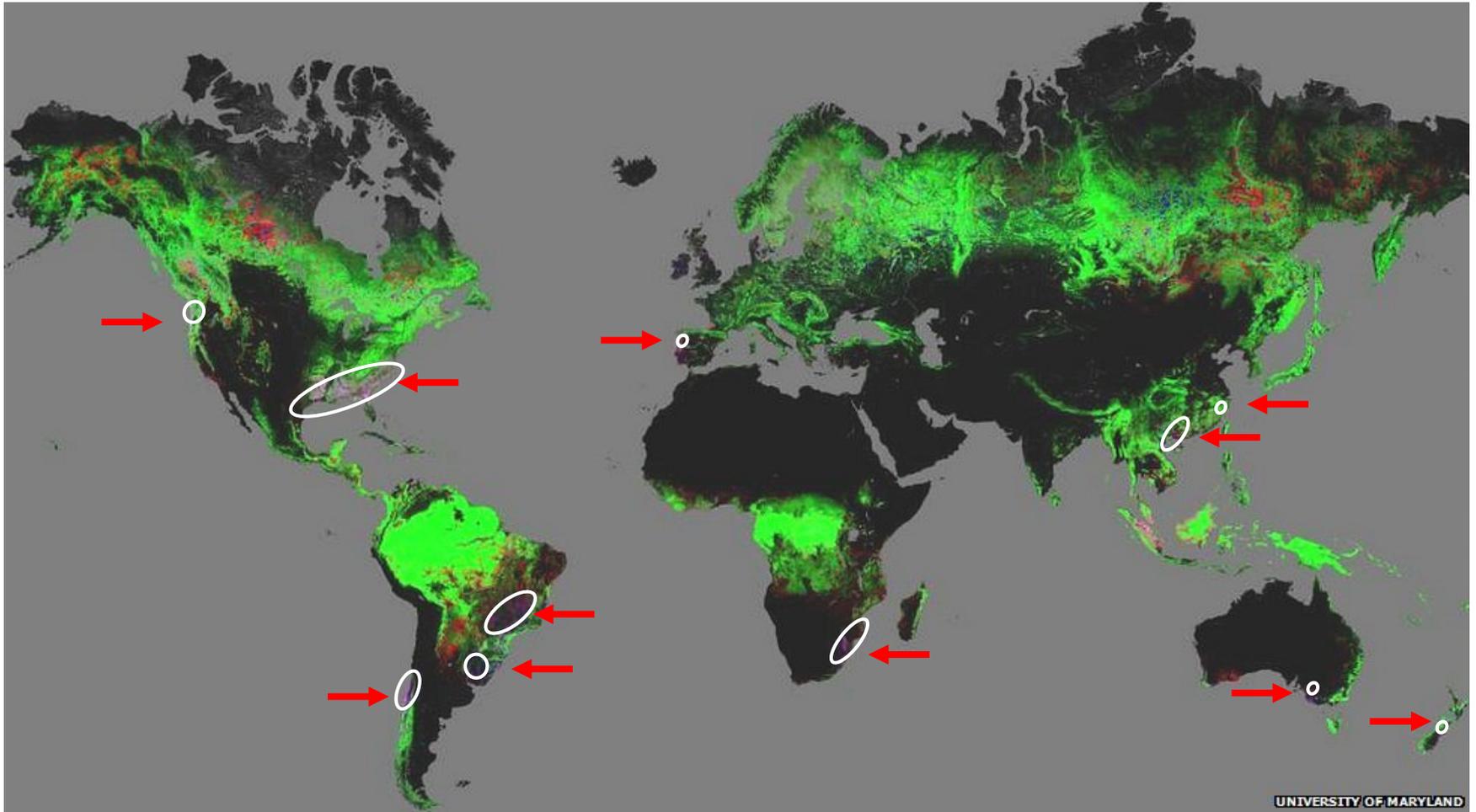
WOOD PRODUCT MARKETS CONSERVE A SUBSET OF GLOBAL FORESTS



UNIVERSITY OF MARYLAND



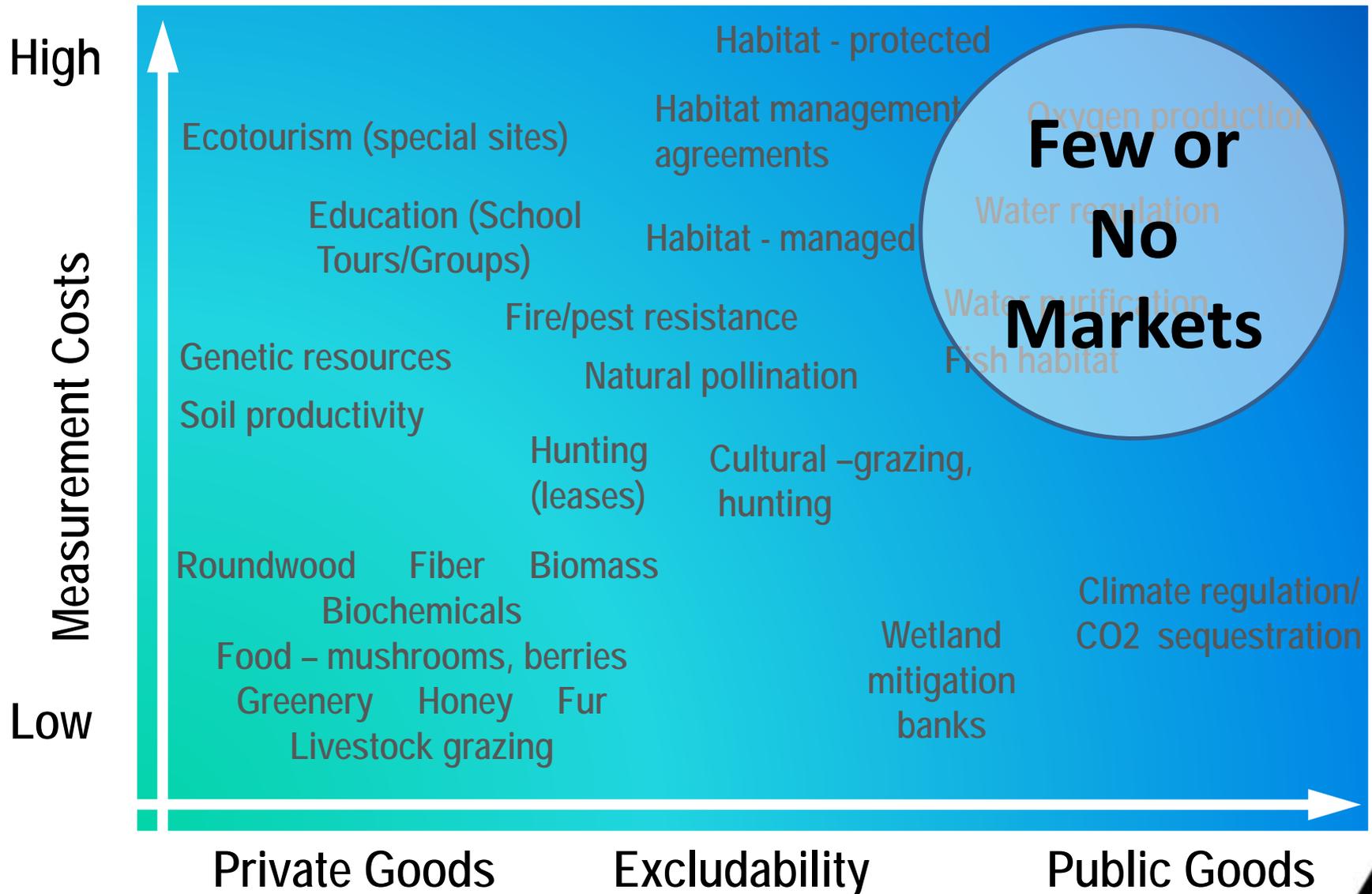
U.S. FORESTS AMONG MOST IMPORTANT



Source: Hansen et al., High-Resolution Global Maps of 21st Century Forest Cover Change, Science Vol. 342, p. 850 (November 15, 2013)



GOAL: A WELCOME LAND USE



COMMITMENT TO RESEARCH ESSENTIAL

**THINNING
STANDS**



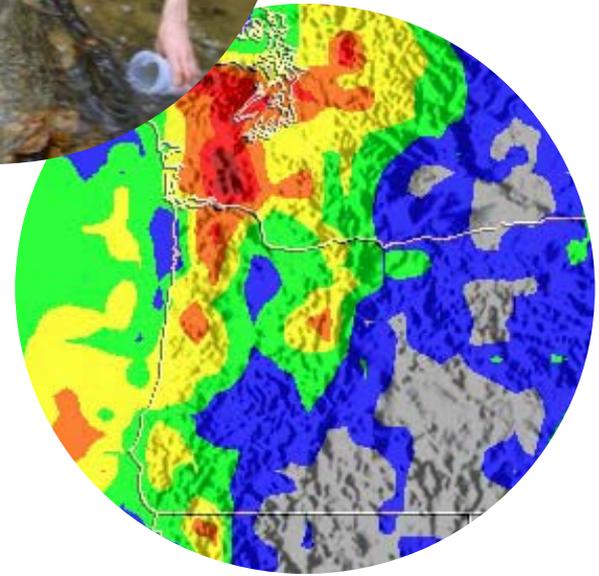
**WATERSHED
RESEARCH**



GENETIC SELECTION



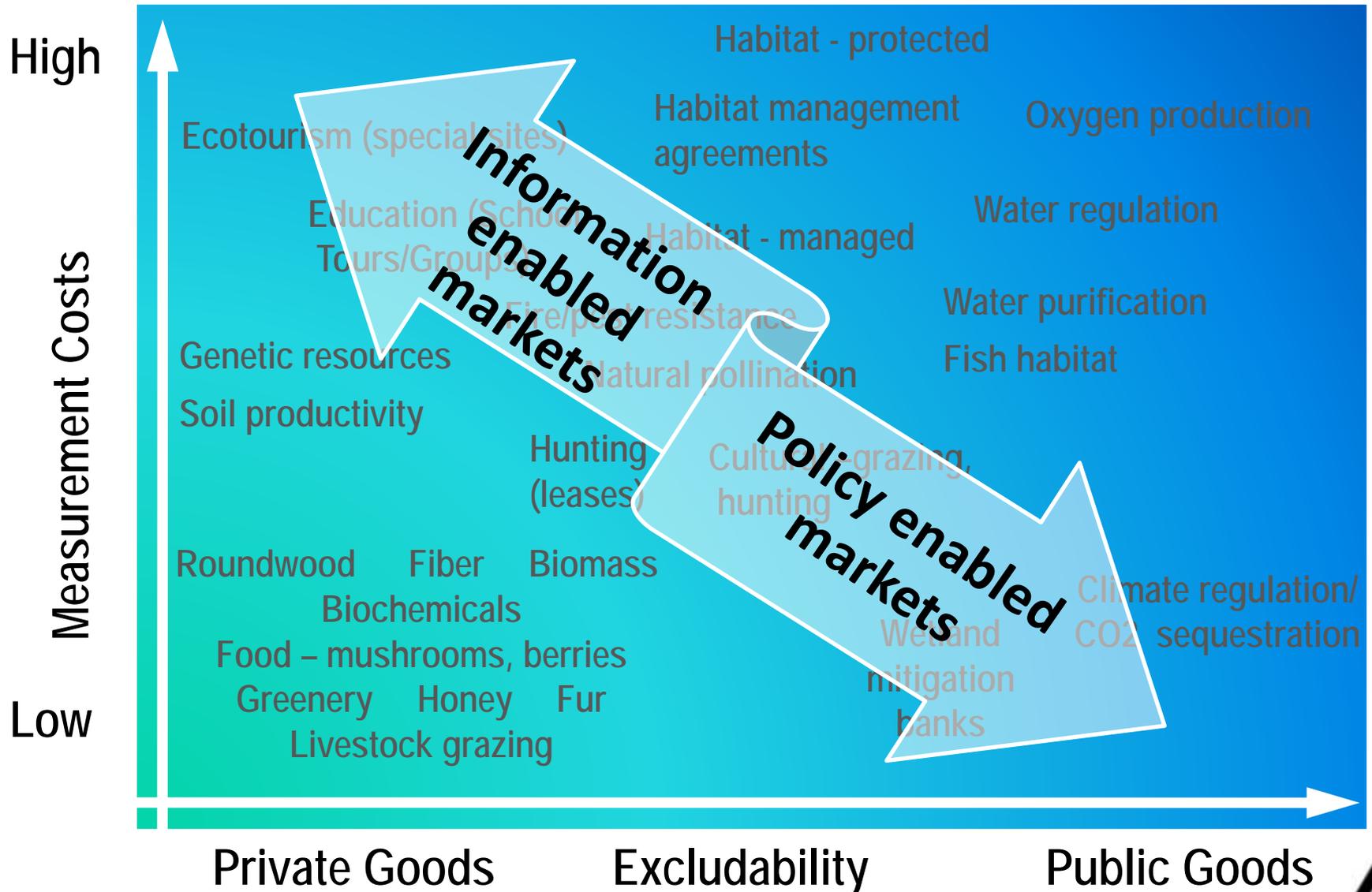
SOIL RESEARCH



**LANDSLIDE
ASSESSMENT**



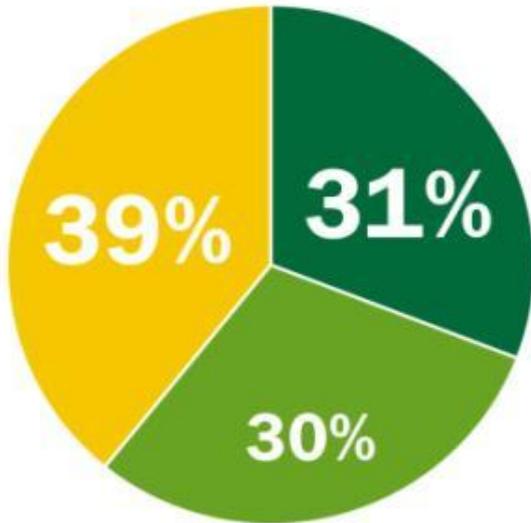
GOAL: NEW MARKETS



INFORMATION EXAMPLE: FOREST CERTIFICATION & LABELING

61 PERCENT OF OUR LOG AND CHIP SUPPLY COMES FROM CERTIFIED FORESTS

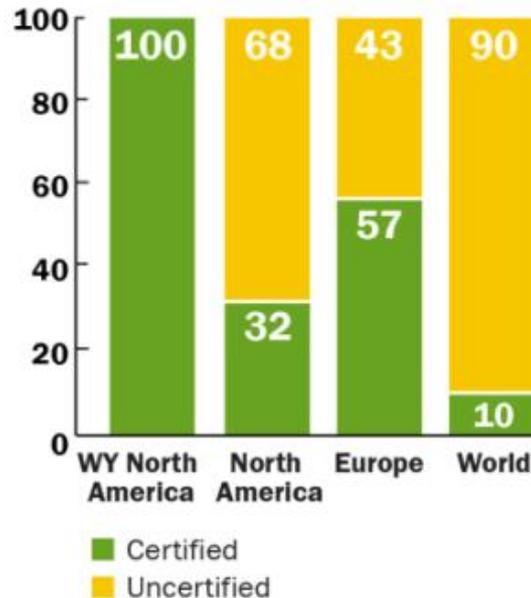
North America



- Certified from Weyerhaeuser timberlands
- Certified from other forests
- Not certified

WEYERHAEUSER EXCEEDS THE NORTH AMERICAN AND GLOBAL AVERAGES FOR CERTIFIED FORESTS

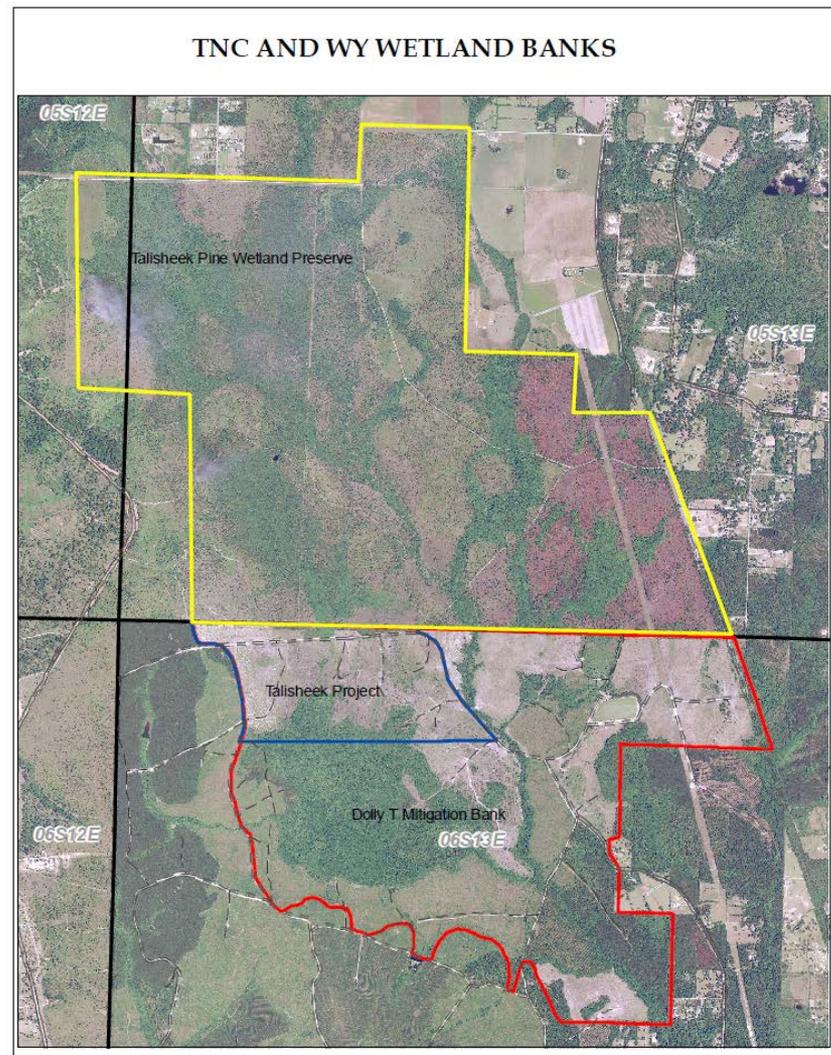
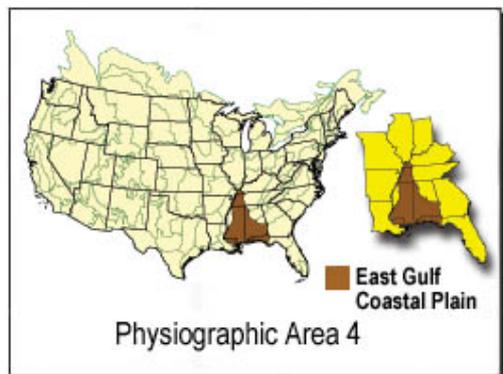
Certified forest as a percentage of total forests by region¹



¹ UNECE/FAO Forest Products Annual Market Review, 2011-2012



POLICY EXAMPLE: WETLAND MITIGATION BANKING



THANK YOU



*una de las principales producciones
de nuestros bosques es la ganadería*

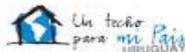
**Después de la producción maderera,
en nuestros bosques se destaca
la producción ganadera.**

Los árboles brindan protección al ganado, lo cual disminuye su gasto energético y permite un mayor engorde. Aproximadamente el 30% de la superficie forestada se encuentra ocupada por calles y caminos, los cuales son pastoreados para controlar la vegetación y reducir los riesgos

de incendio. También la forestación favorece el desarrollo de la apicultura, hongos, fibras, plantas medicinales y aceites esenciales, entre otros. Todas estas variedades se están desarrollando con muy buenas perspectivas al abrigo de los bosques.



Por más información:
www.weyerhaeuser.com



 **Weyerhaeuser**

GERENCIANDO A  Colonyrade S.A.  Las Piques S.A.

