Markets for Ecosystem Services

A Nod to the future?

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Ecosystem Services

- Ecosystems provide a wide range of life-sustaining services that people depend on
- Ecosystem services are being lost at an alarming rate
- How can we create "incentives" to protect and restore these important services




Ecosystem Services

What do we mean?

* Carbon * Pollination * Wildlife * Clean water * Flood Control * Recreation

* Aesthetics * As well as services (with existing markets): timber and other NTFPs, minerals, cattle grazing, etc.




Pollination

- 66% of world's 1500 crop species require animal pollinators
- 15% to 30% of foods people rely on are pollinated by animals (mostly bees)
- <u>Most</u> of the edible oils, fibers, and alcoholic beverages (bats and agave) pollinated by animals

One Approach: Ecosystem Services Markets and Payment Regimes

- Mechanism for placing economic value on services provided by nature
- Sends a "market signal" about the value of these services, creating an incentive to protect them
- Mobilizes new money for conservation




Contribution to Restoration/Jobs?

- **Valuing natural capital puts nature on a level playing field with other economic goods and services**
- **Creating markets based on those values can help make restoration of land financially attractive compared to competing land uses**
- **This can create new jobs, often in local communities**

Courtesy of Michael Verdone

Markets and Payments

Number of different ways to do this around the world:

- **PES – Agreement between providers of ecosystem services (land owners) and beneficiaries (those who benefit from services) to assure services are sustained**
- **Conservation Easements - US Primarily but expanding**
- **Mitigation Banks (eg Water, Biodiversity--US primarily)**
- **Markets (Carbon) through REDD, others**




Watersheds Restored

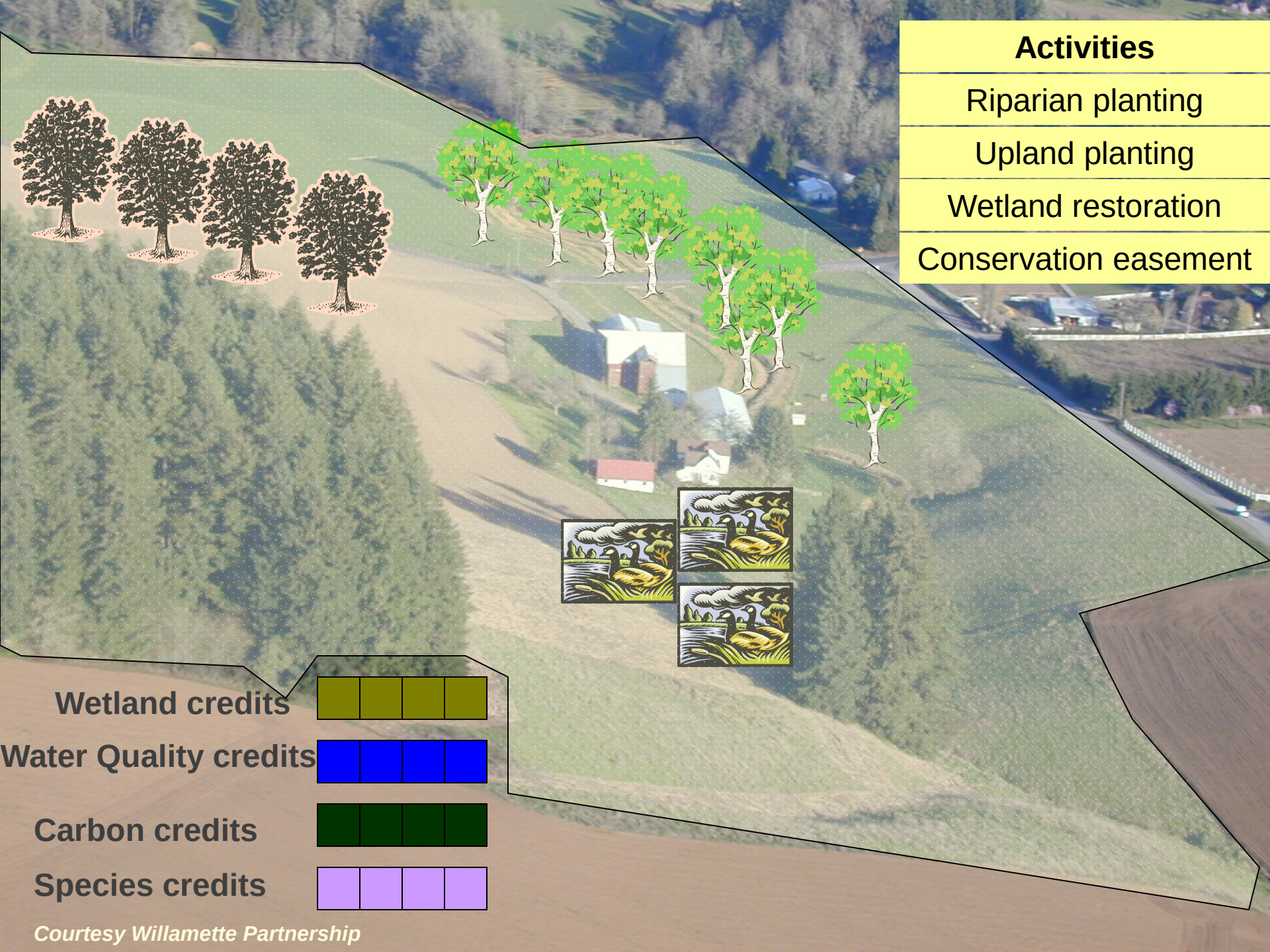
- In 2013, governments, companies, and NGOs invested $12.3 billion in watersheds to regulate the supply and quality of water delivery
- More than 365 million Ha were protected or restored with these funds
- PES – hundreds of private transactions (between private landowners/beneficiaries) and dozens of countries participating in government funded programs 646 MM Ann


Courtesy of Michael Verdone

Over just past 5 years…

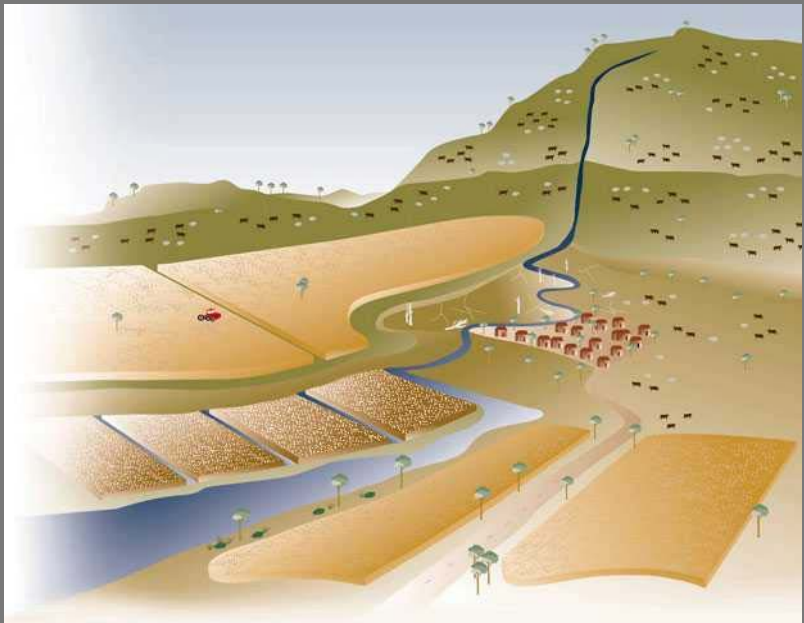
First-of-Its-Kind Report Finds $23 Billion Global Market for Investing in Conservation, $2 Billion from Private Investors

- Water quality (investments in watershed protection, water conservation and storm water management)
- Sustainable Food and Fiber (investments in sustainable agriculture, timber production, aquaculture, and wild-caught fisheries)
- Habitat Conservation (investments in the protection of shorelines to reduce coastal erosion, projects to Reduce Emissions from Deforestation and Degradation (REDD+), land easements, and mitigation banking)



Courtesy Willamette Partnership

What Might the Future Look Like?



PRESENT

The existing rural landscape.

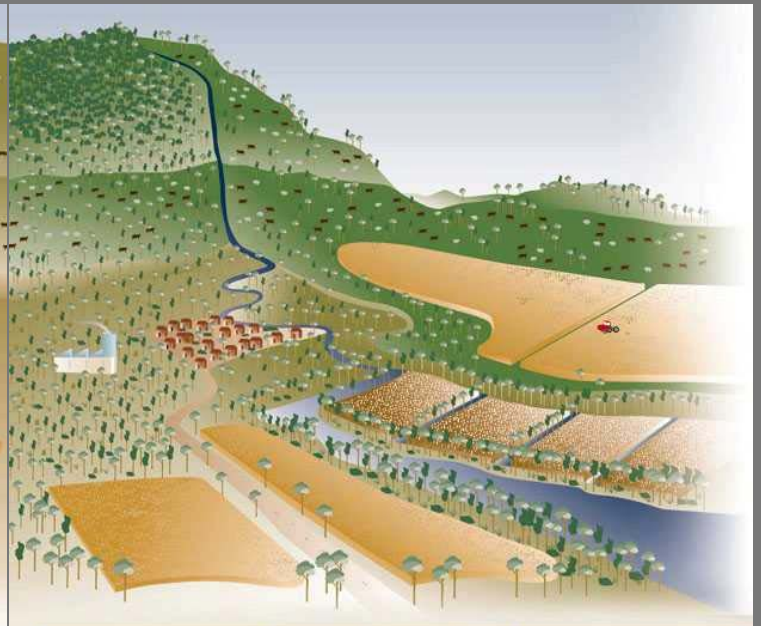
LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	250,000	25,000
Cattle	200,000	40,000
Wheat	250,000	118,000
Canola	150,000	112,000
Cotton	150,000	490,000
TOTAL	1,000,000	785,000

ENVIRONMENTAL PROBLEMS

- Dryland salinity increasing
- Rising water tables and saline discharge
- Nutrients leaching into waterways
- Low biodiversity
- Soil erosion and turbid waterways

Courtesy *New Forests*



FUTURE

Planted forests in the landscape create a more diverse economy and a healthier environment.

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	150,000	18,000
Cattle	120,000	28,000
Wheat	200,000	94,000
Canola	120,000	90,000
Cotton	150,000	490,000
Timber	26,000	12,000
Bioenergy	117,000	9,000
Charcoal	117,000	14,000
Carbon credits		41,000
Salinity credits		26,000
TOTAL	1,000,000	822,000

ENVIRONMENTAL BENEFITS

- Dryland salinity reduced
- Lower water tables and clean discharge
- Nutrients retained on farm
- Biodiversity increased
- Soil erosion reduced

Towards the Future

Can forestry represent a "natural infrastructure" asset class?

- Mechanisms to price ecosystems via carbon (REDD) , watershed protection (water), PES, alongside commercial timber plantations could produce the basis for the stabilization of conservation and production that rival timber values

- Ultimately this must be driven by private capital and private investment
- Need to align public policy, supply chain initiatives, and NGO interests


Courtesy of David Brand, *New Forests*

THANK YOU!

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