



Chesapeake Carbon Summit
October 21, 2008

“Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest. It asserts the new premise that if he fails to do so, his neighbors must ultimately pay the bill. It pleads that our jurists and economists anticipate the need for workable vehicles to carry that reward.”



- Aldo Leopold,
"Conservation Economics",
Journal of Forestry, circa 1934



The Setting:

- ☹ Ever declining federal and state budgets for traditional land conservation / acquisition
 - Even less funding for restoration and management
- 👍 Increased interest by the private capital sector in conservation-based investment opportunities
- 👍 Increased encouragement of private sector participation through Market Based initiatives
- 👍 Arrival of ecosystem services markets (e.g. wetlands, species and carbon) as powerful (and profitable) drivers for land conservation and restoration



“Today I am announcing that USDA will seek to broaden the use of markets for ecosystem services through voluntary market mechanisms. I see a future where credits for clean water, greenhouse gasses, or wetlands can be traded as easily as corn or soybeans”.



~ Mike Johanns

US Sec. of Agriculture

9/5/05



The Markets:

Ecosystem Services Markets:

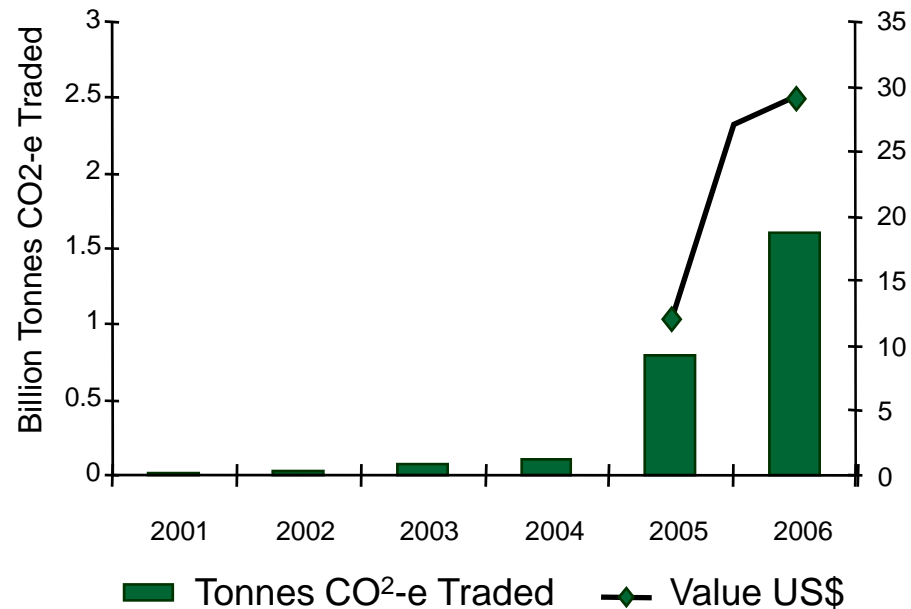
- ❑ **Terrestrial Carbon Sequestration**
- ❑ Wetland & Stream Mitigation Banking
- ❑ Conservation (endangered species) Banking
- ❑ Water quality (TMDL / nutrient trading)
- ❑ Water rights transactions (in-stream flow)
- ❑ Transfer of Development Rights (TDR)
- ❑ Local / developing markets
 - Impervious surface
 - Forest banking
 - Grass banking



The Markets ~ Carbon:

The global carbon market was worth approximately US\$12 billion in 2005 and was valued at US\$29 billion in 2006; continued growth is forecasted in 2007

Global Carbon Market Growth in Volume & Value



Source: Point Carbon (2007): "Carbon 2007 - A new climate for carbon trading" Røine, K. and H. Hasselknippe (eds.) 62 pages.

The Markets ~ *Water and Bio-Diversity:*

- Select examples of annual compensatory mitigation costs in the US*:

Clean Water Act (wetlands and streams)	\$2,500 MM
Endangered Species Act	\$370 MM
Natural Resource Damage Settlements	\$87 MM
Federal Power Act	\$210 MM
<u>Northwest Power Act</u>	<u>\$207 MM</u>
TOTAL	\$3,400 MM

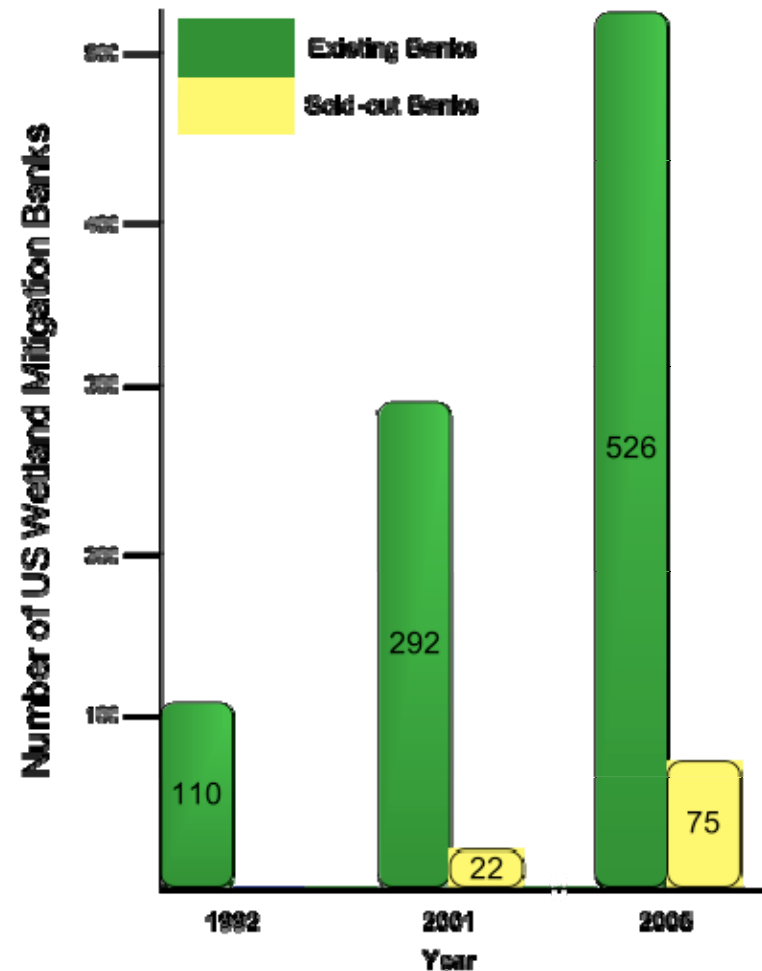
- Only 25% of this demand is being met by purchase of bank credits.

**Environmental Law Institute, “Mitigation of Impacts to Fish and Wildlife Habitat: Estimating Costs and Identifying Opportunities”*



The Markets ~ *The Clean Water Act*

- Established in 1972
- Section 404 requires “no net loss” of aquatic resources
- 1995 guidance allows Mitigation Banking to achieve compensatory mitigation of impacts
- 446% increase in the number of approved mitigation banks between 1992 and 2005
- Wetland mitigation banks are now in 29 states

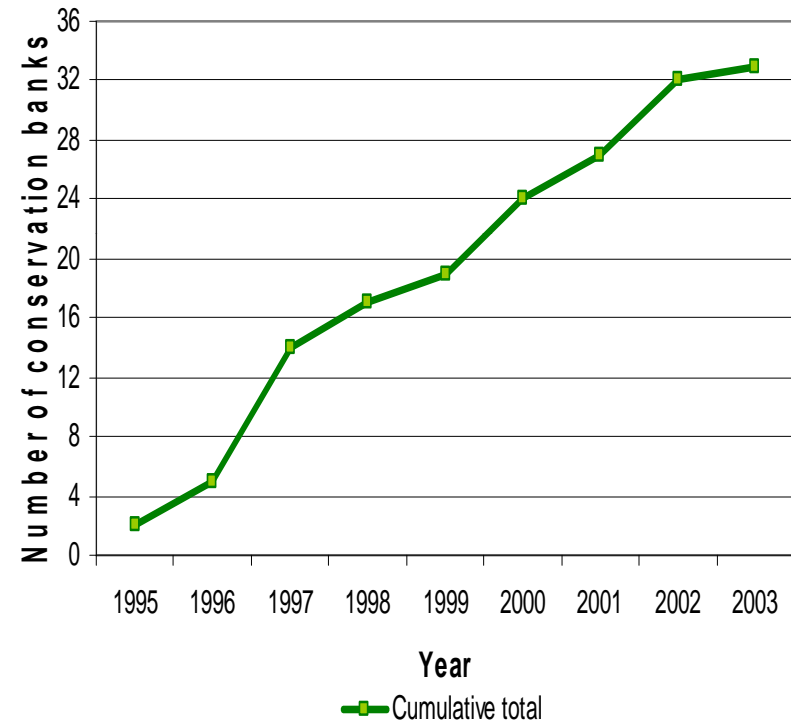


Note: Includes both established banks and banks awaiting approval



The Markets ~ *The Endangered Species Act*

- Established in 1972. Banking authority established in 1995.
- Estimated demand for endangered species mitigation is \$370 million dollars per year
- 70+ approved banks have protected or restored over 110,260 acres of land under the USF&WS' conservation banking program
- Individual states (CA, FL, VA) now establishing similar programs for state listed species
- Credit sales prices vary by species and location. Recent sales include \$100,000 for a cluster of Red Cockaded Woodpeckers to \$125,000 for a breeding pair of Least Bell's Vireo



Ecosystem Services Markets

~ Benefits to Landowners:

- Performance-based (as opposed to cost-share)
 - Encourages creativity
 - Effective and pragmatic (rather than “cookie-cutter”) solutions

- Opportunity for profit
 - Rules set by policy, but transactions are negotiated privately between buyers and sellers

- Compatible with traditional uses
 - Agriculture, silviculture, recreation, etc.



Ecosystem Services Markets

~ Challenges for Landowners:

- Generating credit **supply** is relatively easy – finding **demand** is the key
 - Carbon will be a global commodity
 - Creates demand, but also reduces profit margins

- Economies of scale are a major factor
 - Just like small farms or woodlot owners
 - Incentivizes co-ops or aggregators (investors)

- No free lunch
 - Long-term liability and performance



Ecosystem Services Markets ~ *Keys to Success:*

- Regulatory drivers must be clear, forceful and encourage private markets
 - Example: New Mitigation Rule in the Clean Water Act

- Must set high standards for performance
 - Low standards are bad for the environment, and flood the market with cheap credits

- Government should have a firm, but invisible hand



Example:

Nanticoke Headwaters, Delaware

- ❑ 1,206 acres
- ❑ Investment: \$9,200,000
- ❑ *Cypress Swamp Forest Legacy Area* inholding
- ❑ Restoration – Monoculture pine plantation to forested and emergent wetlands
- ❑ Primary revenue source:
 - Wetland mitigation banking
- ❑ Secondary:
 - Endangered species
 - Carbon
- ❑ Conservation Partners:
 - The Conservation Fund
 - State of Delaware



Before



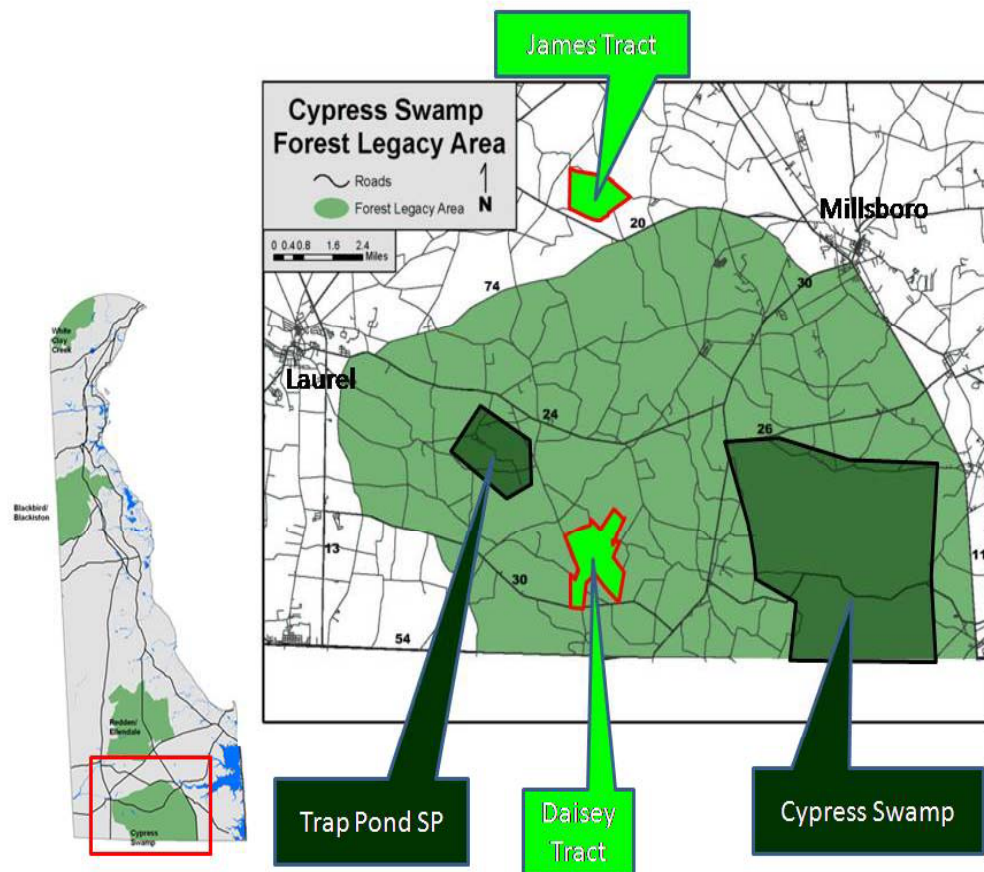
After



Nanticoke Headwaters

Southern Delaware

- 2 of the largest contiguous tracts of undeveloped land in Sussex County, DE ~ one of the nation's fastest growing counties.
- Within 2 hours drive of Baltimore, D.C. and Philadelphia
- Significant capacity for the restoration of forested and emergent wetlands from intensively managed monoculture pine plantations.



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THE CONSERVATION FUND



Before . . .



. . . after



Nanticoke Headwaters, DE:

Components of Value:

- **Wetlands Mitigation** – EIP will restore and permanently protect approximately 350 acres of the property’s former wetlands which are currently in monoculture pine plantation.
- **Sustainable Timber Management** –On the non-mitigation banking portions of the property, EIP will convert the current, low-margin pine pulpwood plantations into a higher-margin (and ecologically more diverse) sawtimber stands.
- **Conservation Finance** –EIP intends to sell working forest conservation easements over the non-mitigation banking portions of the property to the State and/or The Conservation Fund.
- **Final sale** - The resulting ownership will consist of 1,200 acres, with a mix of high quality forest land (subject to conservation easements) and restored wetlands with high recreational value. Likely buyer(s) include private conservation buyers, or the State.



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