



United States Department of Agriculture

# Ecosystem Service Markets & Incentives: a USDA overview

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Service on behalf of the Office of  
Env'l Markets

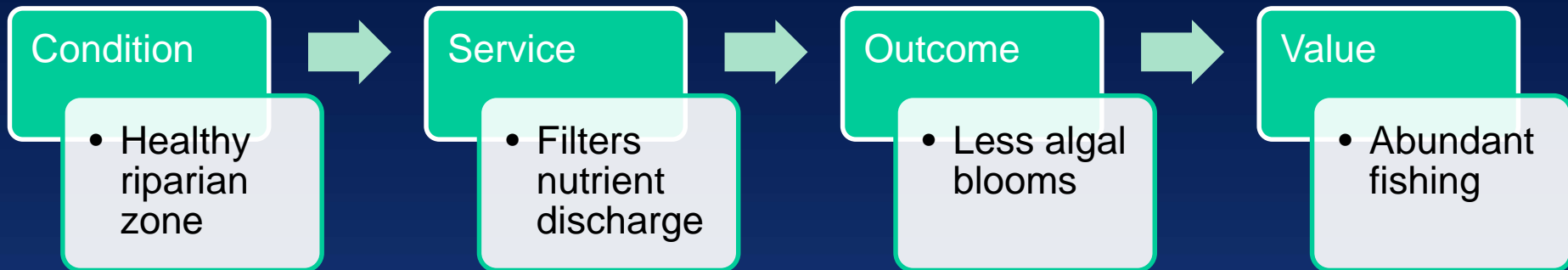
# What are ecosystem services?



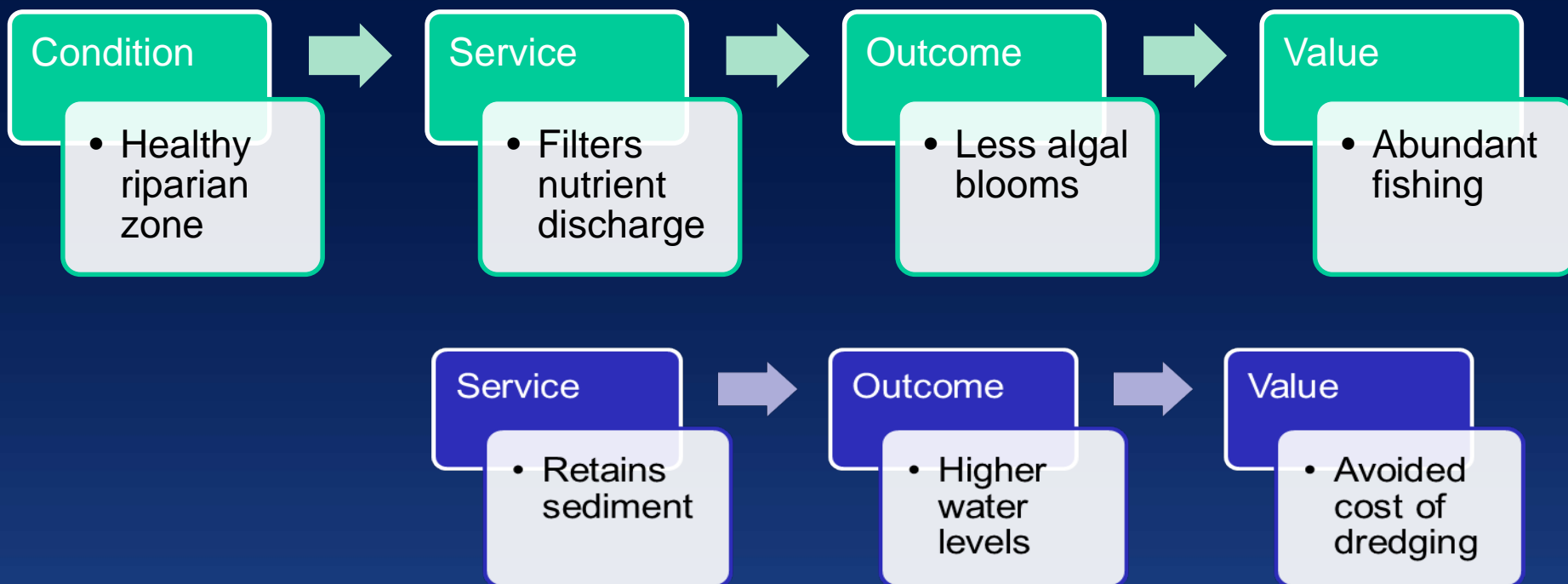
First explicitly recognized in 2005 Millennium Ecosystem Assessment as the ecological contributions (direct and indirect) to human well-being

“Nature’s Benefits”

# A quick example...



# A quick example...





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# Why Markets?





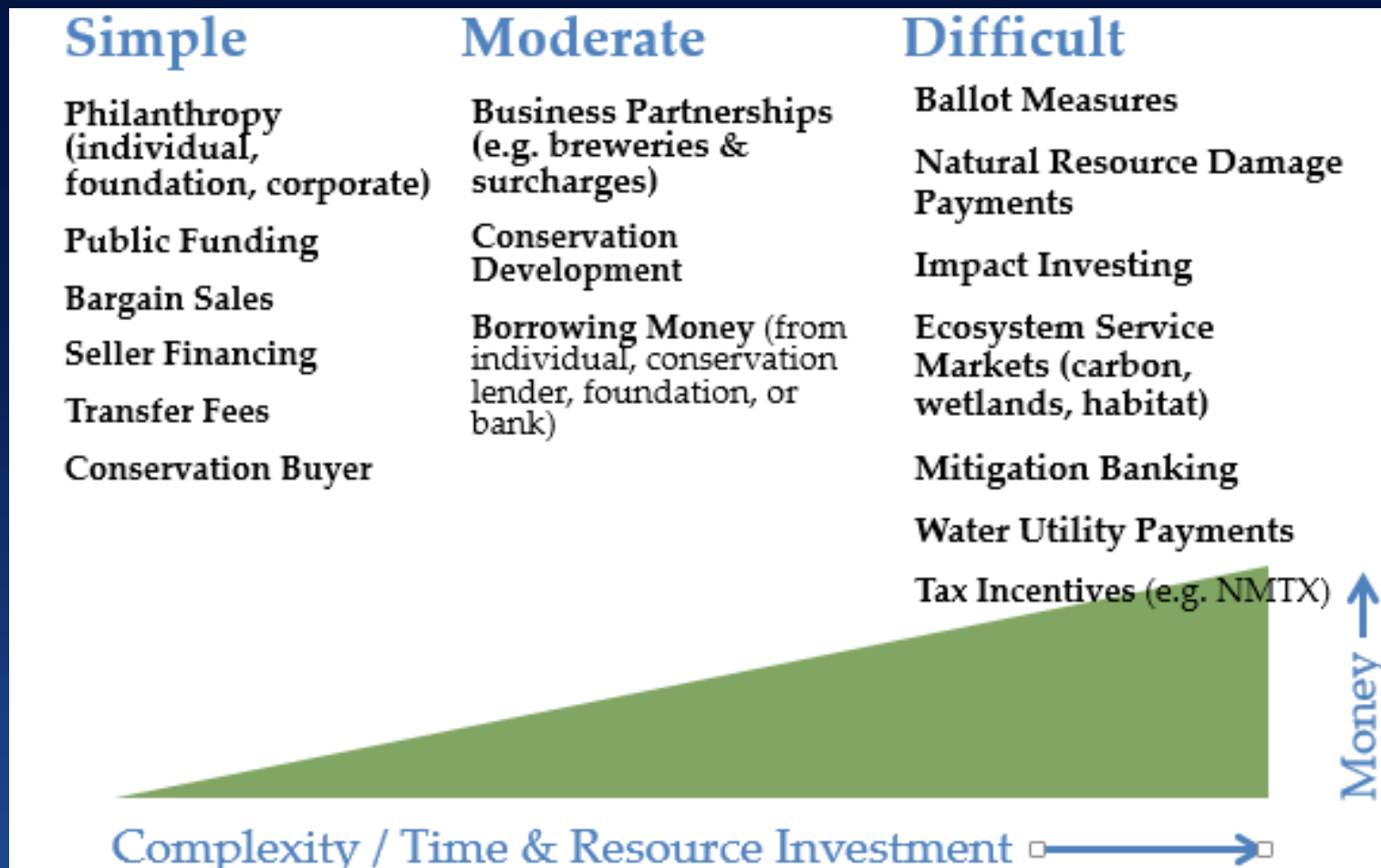
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# Markets for Ecosystem Services

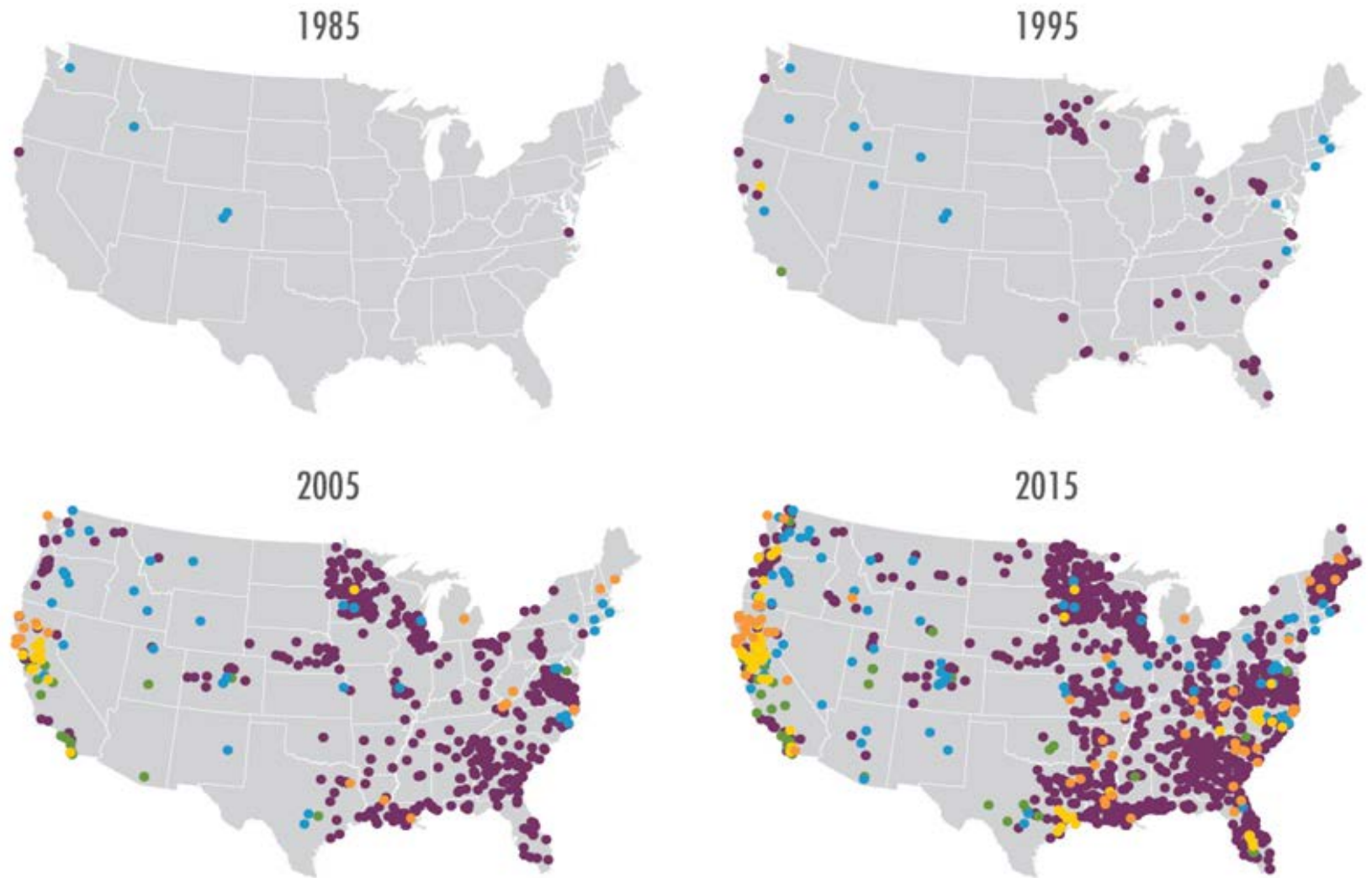
- Transparent
- Science-based
- User-friendly
- Meaningful
- Appropriate
- Consistent
- Accepted
- Meet Regulatory Criteria
- Demonstrate Value



# Markets for Ecosystem Services



# U.S. Market Growth 1985 - 2015



● Forest carbon ● Imperiled species/habitats ● Wetlands and streams ● Watersheds ● Multiple asset types





# U.S. Environmental Market Activity

Sector	Estimated Volume	Year
Wetlands		
Banks	\$3.50 billion	(2016)
In-Lieu Fees	\$0.04 billion	(2015)
Species and Habitat	\$0.35 billion	(2016)
Carbon and Greenhouse Gas		
Voluntary	\$0.05 billion	(2015)
CA Regulatory	\$0.06 billion	(2015)
Water Quality		
Trading	\$0.03 billion	(2015)
PWS	\$0.07 billion	(2015)
Water Quantity		
In-stream buybacks	\$0.05 billion	(2015)



# Role of Government

- Develop policy to meet public needs
- Provide flexibility in regulatory structures
- Improve transparency
- Reduce perceived risk and uncertainty
  - Support development of tools and resources
- Support innovation
  - Pilot projects and demonstrations
  - Provide funding



# Why is USDA involved?

- Consistent with mission and existing authorities
- In the 2008 Farm Bill, Congress instructed USDA to establish uniform guidelines for science-based methods to measure ecosystem services benefits ... and facilitate the participation of farmers, ranchers, and forest landowners in emerging ecosystem services markets.



*“USDA asserts no direct or indirect interest in credits generated with Farm Bill funds.”*

- (a) However, USDA retains the authority to ensure that Farm Bill program purposes are met. In addition, any requirements or standards of an environmental market in which a participant simultaneously enrolls to receive environmental credits must be compatible with the purposes and requirements of the USDA program contract.
- (b) The participant must meet all operation and maintenance (O&M) requirements for program-funded activities
- (c) Participants may not use program funds to implement conservation practices and activities that the participant is required to establish as a result of a court order.



# USDA investments in Agroforestry\*

(FY2011-2012)

Technical and financial assistance (FSA, NRCS)	\$318 million
<ul style="list-style-type: none"><li>• 99% riparian buffers and windbreaks</li><li>• 1% alley cropping, multi-story cropping/forest farming, and silvopasture</li></ul>	
Research, Education, Extension (ARS, FS, NIFA)	\$ 11 million
Technology Transfer, Training/Workshops, Outreach (FS)	\$ 7 million
Marketing, Rural Development (AMS, RD)	\$ 1 million

\* The last USDA Agroforestry financial cross-cut was conducted in 2013 with FY 2011-2012 data.



# FSA and NRCS Practices to Support Agroforestry

## ***Conservation Security Program (CSP)***

### ***Conservation Practices***

- CP5 Field Windbreak
- CP16 Shelterbelt
- CP17 Living Snow Fences
- CP22 Riparian Buffer
- CP31 Bottomland Timber Establishment on Wetlands

## ***Environmental Quality Incentives Program (EQIP)***

### ***Technical Standards***

- Alley Cropping (311)
- Multi-Story Cropping (379)
- Riparian Forest Buffers (391)
- Silvopasture estmt. (381)
- Windbreak/Shelterbelt Establishment (380)
- Windbreak/Shelterbelt Restoration (650)





# Market-based Approaches Will Not Work Everywhere

## Markets work where:

- There is a strong "driver" (regulatory or financial)
- Participants have different abatement costs
- Uncertainty can be reduced
- Stakeholders and administrators work together to design and implement trading programs



# Common Reasons Markets Fail

- Inadequate drivers / missing incentives
- Uncertainty about rules, liability, performance
- Legal and regulatory obstacles
- Market design flaws
  - High trading ratios
  - High transaction costs
  - High baseline requirements
- Unrealistic expectations

# Opportunities for Growth

- Public-Private Partnerships
  - Conservation Finance
  - Payment for Performance
  - Payments for Ecosystem Services
- Government purchase/sale of credits
  - Conservation Program Payments
  - Offsets





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# THANK YOU

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